User guide

MAGNAVOX

SMART. VERY SMART.

PLASMA TELEVISION

WVGA PLASMA PANEL

www.magnavox.com

Important Safety Instructions

WARNING

RISK OF ELECTRIC SHOCK
DO NOT OPEN

WARNING: To reduce the risk of electric shock, do not remove the front or back covers. No user-serviceable parts inside. Refer servicing to qualified service personnel only.

The lightning flash with arrow-head within a triangle is intended to inform the user that parts inside the product are a risk of electric shock.

The exclamation point within a triangle is intended to tell the user that important operating and servicing instructions are explained.

Special Notices

- Certain programs may be copyrighted and any unauthorized recording in whole or in part may be in violation of copyright laws in the U.S. and Canada.
- FCC/CSA regulations state that any unauthorized modifications to this display may void user authority to operate it.

Warnings & Precautions

- To prevent damage which may result in fire or shock hazard, do not expose this product to rain or moisture.
- To prevent electric shock, do not remove cover. No user serviceable parts are inside. Refer servicing to qualified service personnel only.
- Keep display away from excessive dust, high temperature, moisture or direct sunlight.
- Use in a well-ventilated area and do not cover ventilation openings.
- Unauthorized modifications to this equipment or usage of an unshielded connecting cable may cause excessive interference.
- When the display is not in use, disconnect it from the electric outlet.
- If the picture displayed is in any way abnormal, turn off the unit and disconnect it from the electric outlet. Verify your signal wire connections and reconnect the display to the electric outlet.
- Do not place this product on an unstable cart, stand or table. The product may fall, causing serious damage.
- Do not place the unit on a bed, sofa, rug, or other similar surfaces.
- Never place the unit near or over a radiator or heat source.
- Do not install unit in an enclosed area unless proper ventilation is provided.
- The unit should be operated from the type of power source indicated on the label. If the type of available power is unknown, consult your dealer or local power company.
- The unit is equipped with a 3-pin grounded plug. The plug will only fit into a grounded power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician. Do not alter this plug as this will defeat the safety feature. Power cord not lighter than H05VV-F, 3G, 0.75mm² shall be used.
- Do not rest objects on the power cord & avoid placing power cord near high traffic areas.
- Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.
- Unplug the display from the electric outlet and disconnect the antenna/cable TV system during a lightning storm or when left unused for long periods of time. This will prevent damage to the display caused by lightning and power-line surges.
- Avoid overhead power lines. An outdoor antenna system should not be placed in the vicinity of overhead power lines, electric lights, or power circuits. When installing an outdoor antenna, be careful to not touch any power lines or circuits as contact with these lines can be fatal.
- Do not insert any foreign objects through the ventilation openings to the display. It may touch dangerous voltage points or damage parts.
- If an outdoor antenna or cable system is connected to the display, be sure the antenna or cable system is grounded to provide some protection against voltage surges and static charge buildups. Section 810 of the National Electrical Code, ANSI/NFPA No.70-1984, provides information about proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

Important Safety Instructions

- If this display is equipped with separate speakers, please remove the speakers prior to moving the display. Moving the display with the speakers attached may cause damage or injury.
- Disconnect the unit from the main supply and refer servicing to qualified service personnel under the following conditions:
  - Power cord or plug is damaged or frayed.
  - Liquid has been spilled into the product and/or the unit has been exposed to water or moisture.
  - Unit does not operate normally when the operating instructions are not followed. Adjust only those controls that are covered by the operating instructions, improper adjustment of other controls may result in damage which often requires extensive work by a qualified technician to restore the unit to normal operation.
  - Unit has been dropped or the cabinet has been damaged.
  - Unit exhibits a distinct change in performance, indicating a need for service.

Cleaning & Maintenance

- Disconnect from the electric outlet before cleaning. Do not use liquid or aerosol cleaners. Use only a slightly damp cloth for cleaning.

Special Warranty Information

Cell Defects

- Although the display panels are produced with more than 99% percent active cells, there may be some cells that do not produce light or remain lit. This is considered normal and not a manufacturer defect.

Important Safeguards

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the paratus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. To Reduce the Risk of Fire or Electric Shock, Do not Expose This Appliance To Rain or Moisture.
16. Apparatus shall not be exposed to dripping or splashing, and objects filled with liquids shall not be placed on the apparatus.

Regulatory Notice

FCC Statement

The Federal Communications Commission Radio Frequency Interference Statement includes the following warning:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television receptions, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Warning

User must use shielded signal interface cables to maintain FCC compliance for the product. Provided with this display is a detachable power supply cord with IEC320 style terminations. It may be suitable for connection to any UL Listed personal computer with similar configuration. Before making the connection, make sure the voltage rating of the computer convenience outlet is the same as the monitor and that the ampere rating of the computer convenience outlet is equal to or exceeds the monitor voltage rating. For 120 Volt applications, use only UL Listed detachable power cord with NEMA configuration 5-15P type (parallel blades) plug cap. For 240 Volt applications use only UL Listed Detachable power supply cord with NEMA configuration 6015P type (tandem blades) plug cap.

IC Compliance Notice

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations of ICES-003.

Cet appareil Numerique de classe B respecte toutes les exigences du Reglemont NMB-03 sur les equipements produisant des interferences au Canada.

Notice de Conformit IC

Cet appareil numerique de classe B respecte toutes les exigences du Reglement ICES-003 sur les equipements produisant des interferences au Canada.

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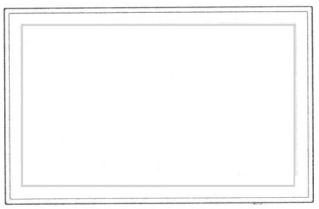
Getting to Know Your Display

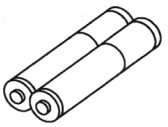
Getting to Know Your Display

Package Contents

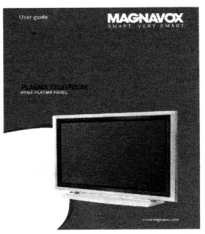


Flat Panel Display

Remote Control



AAA Batteries

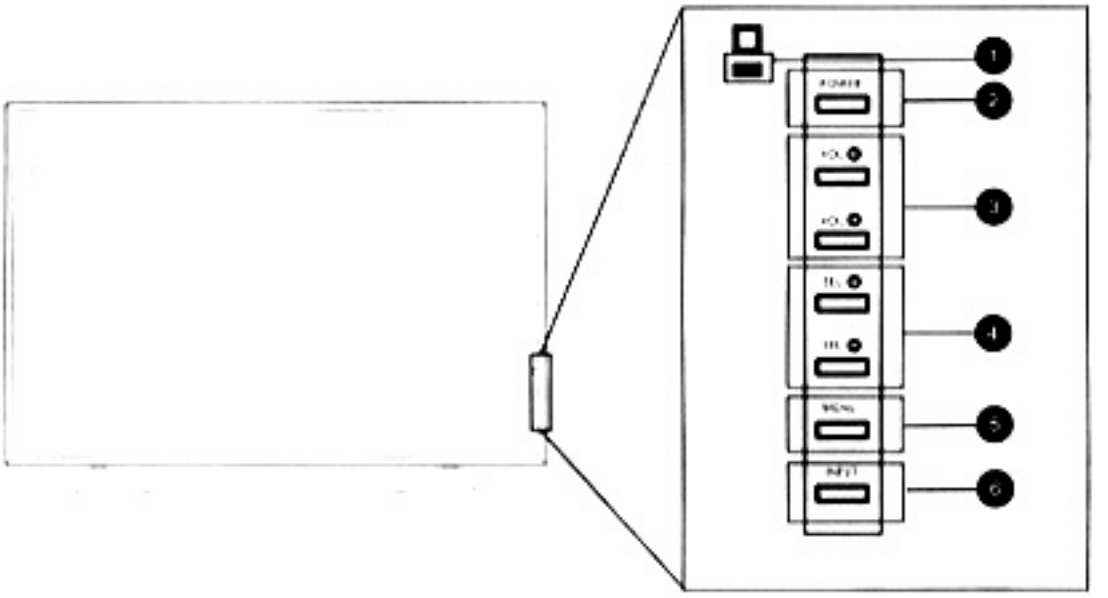


User Manual

VGA Cable

AC Power Cord

Front Panel Controls



1 Status LED

Not Illuminated - No AC Power detected
If the main power switch (rear of panel) is turned off, this LED will not illuminate.
Orange - Standby (Power OFF) with AC power detected
The LED will illuminate in orange color if the monitor is shut-off but the main power cord is plugged into the back of the unit.
Solid Green - Power ON

2 Power (Standby) Button

Turns power on/off from standby mode. There is a wait period between on/off cycles.

3 Volume Adjustment Buttons

Use these buttons to adjust volume up and down. These keys also serve as navigation and adjustment keys when On Screen Display menu is engaged.

4 Select Buttons

Use these buttons to change the channel up and down. These keys also serve as selection keys when On Screen Display menu is engaged.

5 Menu Button

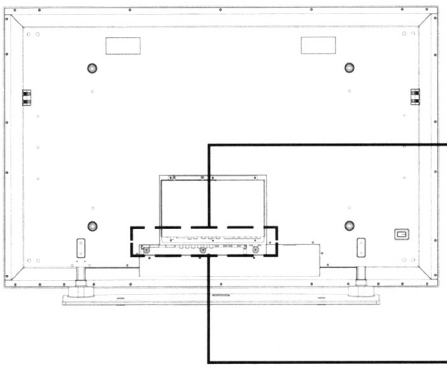
Use this button to engage the On Screen Display menu.

6 Input Button

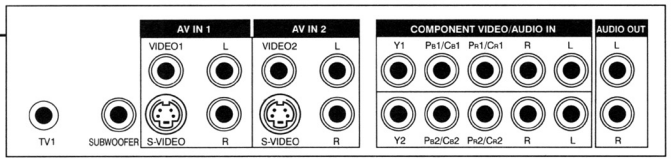
Use this button to switch between available inputs.

Getting to Know Your Display

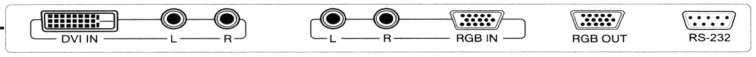
Rear Panel



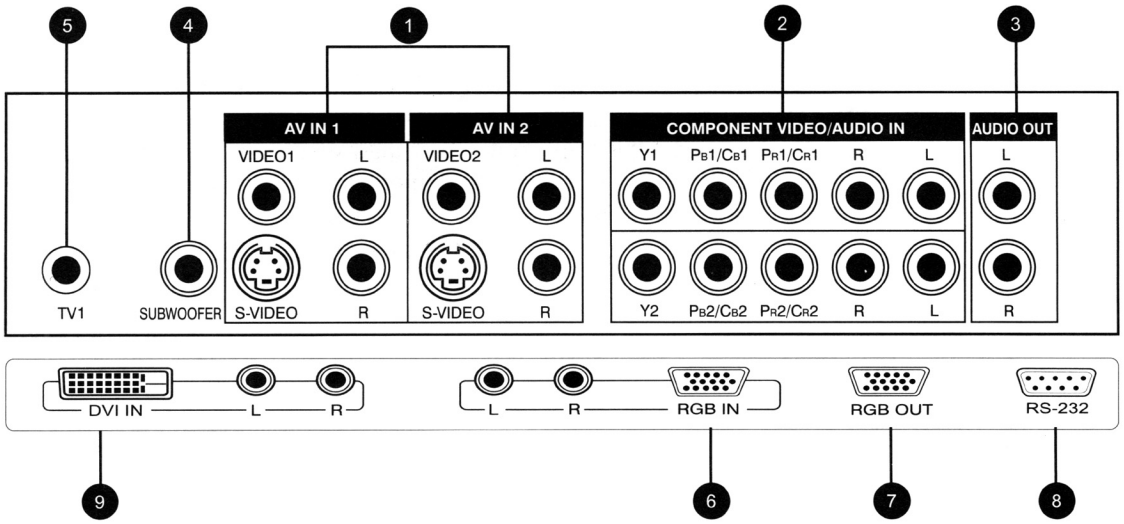
Video Connectors



RGB/Computer Related Connector



Rear Panel Connections



1 Composite / S-Video Inputs

Connect Composite or S-Video signals from external sources such VCRs or DVD players.

2 Component Video Inputs

Auto-detecting component video inputs (Y/Pb/Pr or Y/Cb/Cr) for connecting to the component output jacks of a DVD player or Set-Top Box.

3 Audio Output

Variable or fixed audio output jacks for connecting to an external audio amplifier.

4 Subwoofer Output

Variable or fixed low-frequency audio output jack for connecting to an external amplified subwoofer.

5 Antenna Jack

Connect to TV or CATV antenna.

6 RGB Input

Connect to RGB output of computer or Set-Top box.

7 RGB Output

Connect to another computer monitor for daisy chaining applications.

8 RS-232 Connector

Connect to a computer serial port.

9 Digital DVI Input

Connects to the digital video signals from a set top box or PC.

Remote Control

1 Standby Power On/Off

Push this button to turn on the monitor from Standby mode. Push it again to turn off to Standby mode.

2 Sound Mute On/Off

3 Number Keypad

Use number keypad to select the TV channel you want to watch.

4 QuickView

Use QuickView key to recall the last TV channel watched. (See Page 66)

5 Volume +/-

Turns volume up or down.

6 PIP (Picture-in-Picture Button)

Turns on PIP (Picture-in-Picture) mode and POP (Side-by-Side) picture mode. (See Page 36)

7 PIP/POP Source

Changes the input source of the PIP or POP sub-window. (See Page 37)

8 Channel UP/DOWN

Change TV channels sequentially by pressing up or down.

9 Input Select

Press to select input signal modes sequentially. (See Page 26)

10 Favorite Channel

Recalls TV channels programmed using favorite channel memory. (See Page 65)

11 PIP Position

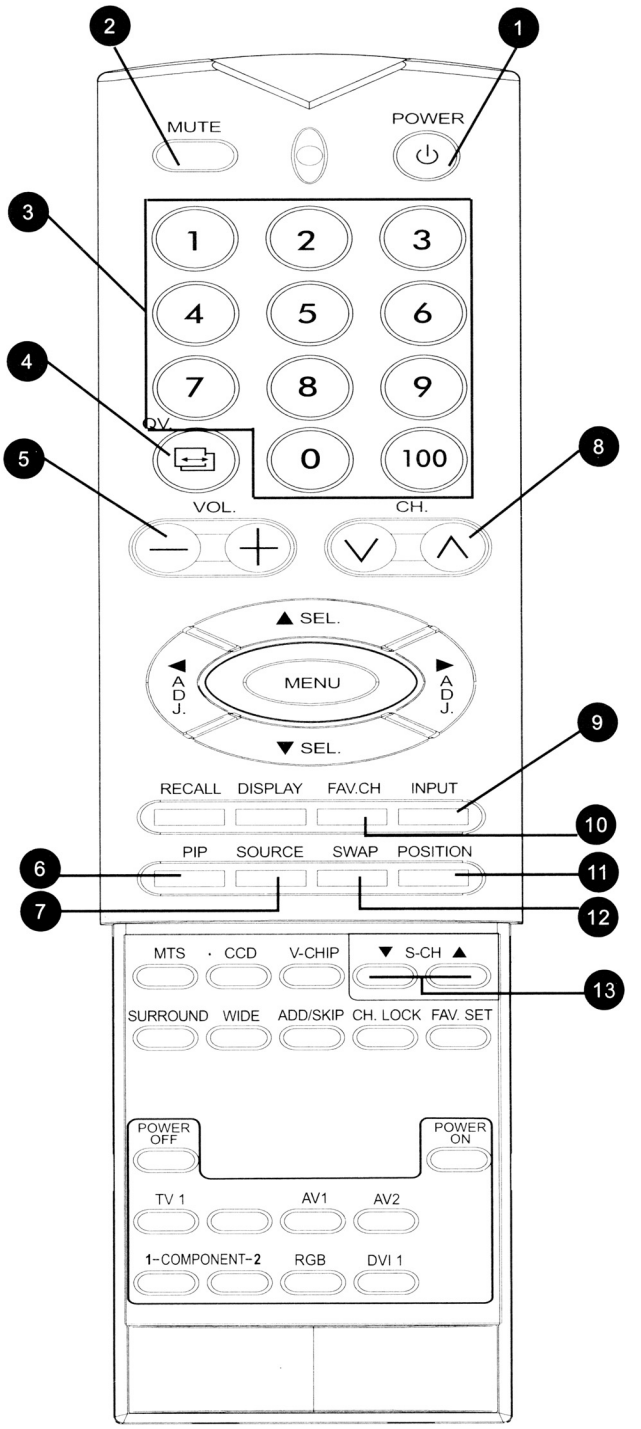
This key changes the PIP sub-window to 4 different corner locations. (See Page 38)

12 Swap

This key swaps the main and sub picture windows under PIP or POP modes. (See Page 38)

13 Sub-window TV Channel UP/DOWN

Press up or down to sequentially change TV channels on the sub-window of PIP or POP mode. (See Page 38)



Remote Control

14 Menu
Engages the OSD menu.

15 Recall
Recalls default picture settings. (See Page 34)

16 Display
Press to show the status of the monitor. (See Page 29)

17 MTS Stereo
Engages MTS stereo reception for TV. (See Page 60)

18 Closed Captioning
Turns on Closed Caption Mode. (See Page 61)

19 Surround
Turns on surround sound effect. (See Page 46)

20 WIDE
Toggles between various aspect ratio settings. (See Page 30)

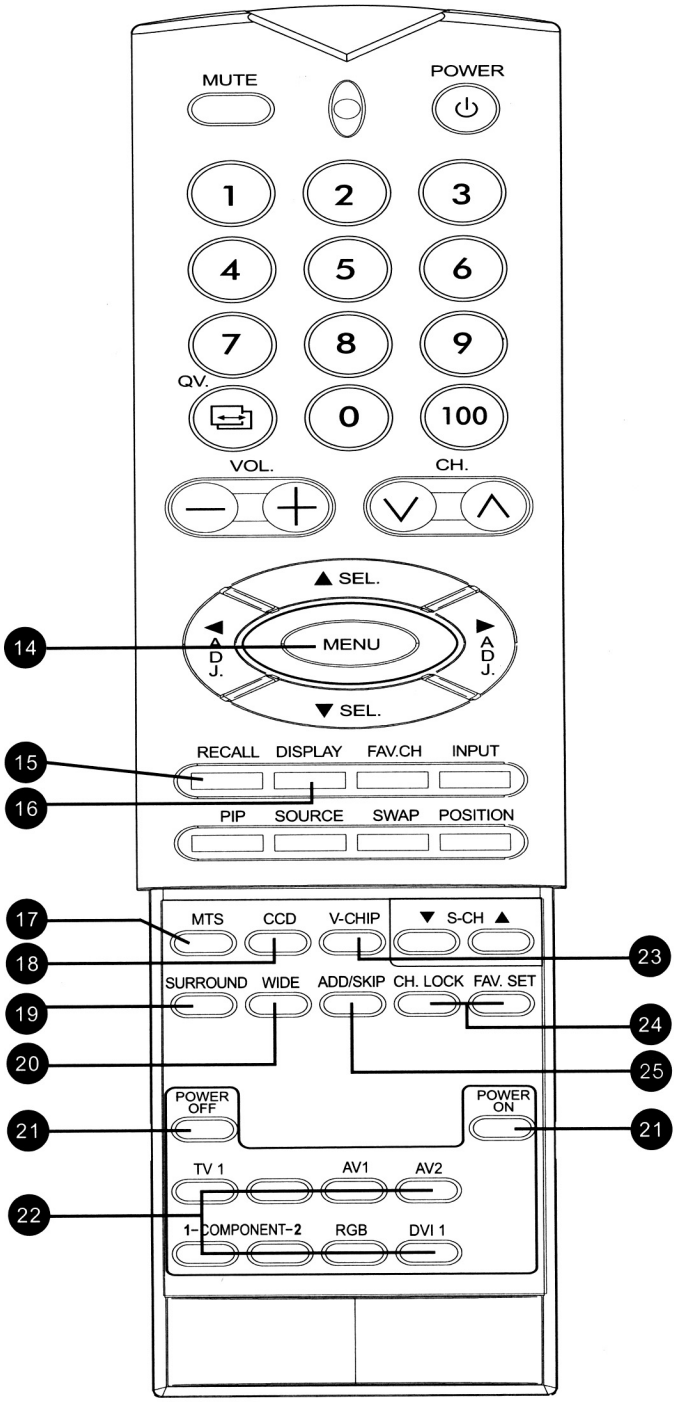
21 Discrete Power ON/OFF
Press OFF to send monitor into Standby mode. Press ON to power on from standby mode. (See Page 26)

22 Direct Input Selection Keys
Directly change input signal selection by pressing the appropriate key. (See Page 27)

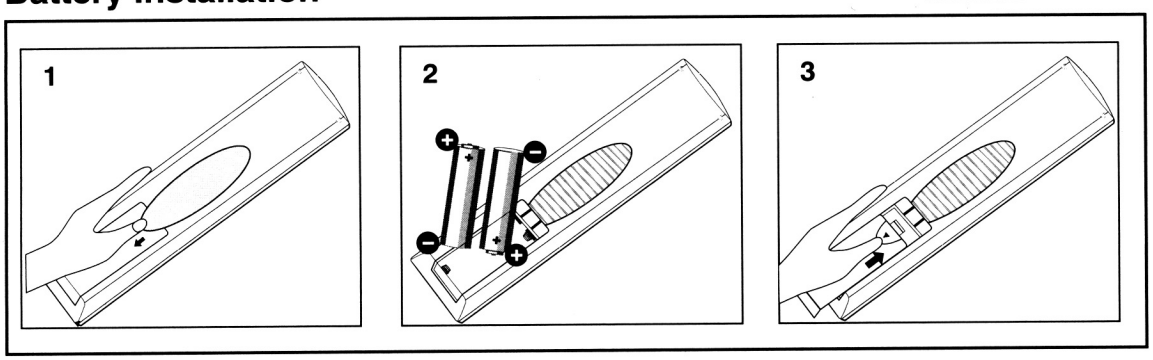
23 V-Chip
Engages V-Chip protection circuitry settings. (See Page 62)

24 Channel Lock / Fav. Set
Engages Channel Lock and Favorite Channel Setup Menu. (See Page 65)

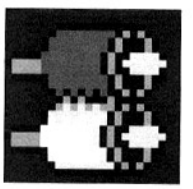
25 ADD/ Skip
Set the Channel to Erase status. (See Page 58)



Battery Installation



Display Connections

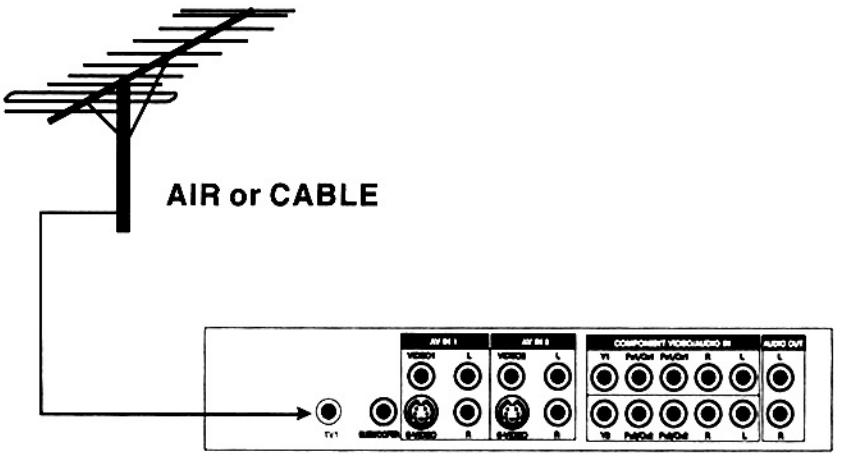


Display Connections

Connecting TV or CATV

Connecting to TV or Cable TV

Connect the coaxial (RF) connector from the antenna or cable TV box to the TV input on the back of monitor.



Connecting a VCR

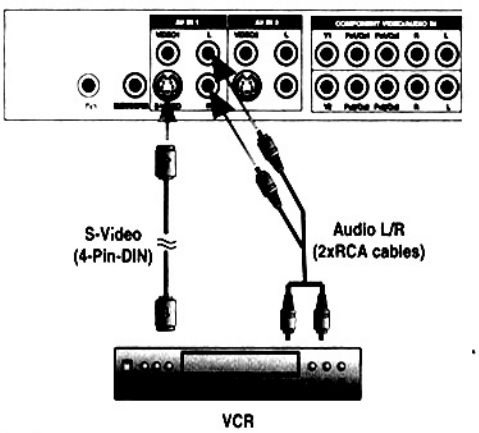
Using S-Video Input

1. Connect the S-Video (4-pin DIN) connector from the VCR to the S-Video input on the back of monitor.

2. Connect the red (R) and white (L) audio jacks from the VCR to the (R) and (L) audio-in jacks located next to the S-Video connector.

Note:

- There are two sets of S-Video inputs provided.

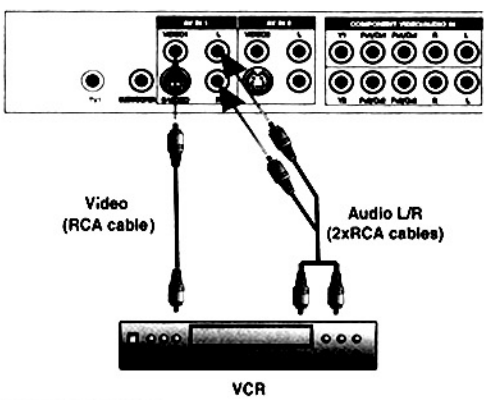


Using Composite Input

1. Connect the yellow (video) out connector from the VCR to the yellow video input on the back of monitor.

Note:

- There are two sets of composite inputs provided.



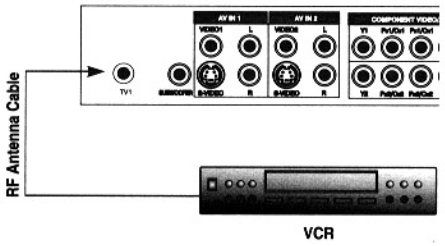
2. Connect the red (R) and white (L) audio-out jacks from the VCR to the R and L audio-in jacks located next to the yellow Video connector.

Using TV Input

1. Connect the output to TV (RF out or Antenna out) connector from the VCR to the TV input on the back of monitor.

Notes:

- Cable must be connected from wall/cable box into the VCRs antenna (RF) input.



Connecting a DVD Player

Using Component Video Input

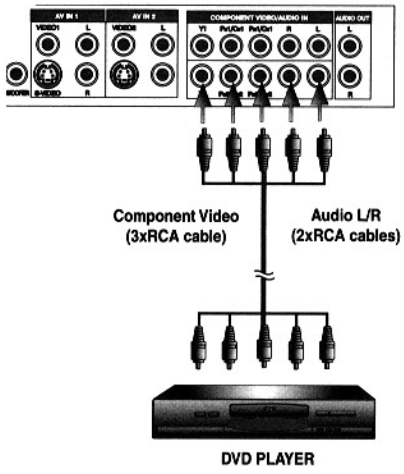
There are two sets of component video inputs provided. You can use either set of component inputs to connect your DVD Player.

1. Connect the green-colored (labeled as Y) jack from the DVD Player to the green-colored jack of the monitor.

2. Connect the red-colored (labed as Pr or Cr) jack from the DVD Player to the red-colored Pr1/Cr1 jack of the monitor.

3. Connect the blue-colored (labed as Pb or Cb) jack from the DVD Player to the blue-colored Pb1/Cb1 jack of the monitor.

4. Connect the red (R) and white (L) audio jacks from the DVD Player to the R and L audio-in jacks located next to the Pr/Cr1 connector.

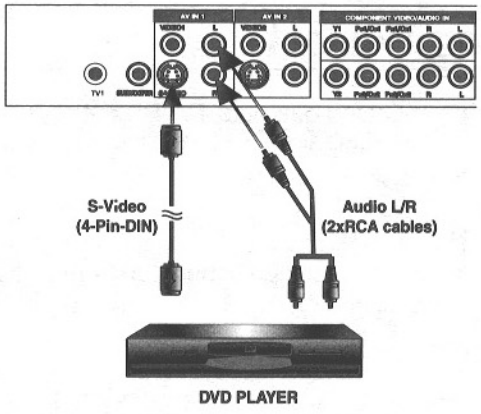


Connecting a DVD Player (con't)

Using S-Video Input

1. Connect the S-Video (4-pin DIN) connector from the DVD Player to the S-Video input on the back of monitor.

2. Connect the red (R) and white (L) audio jacks from the DVD Player to the (R) and (L) audio-in jacks located next to the S-Video connector.



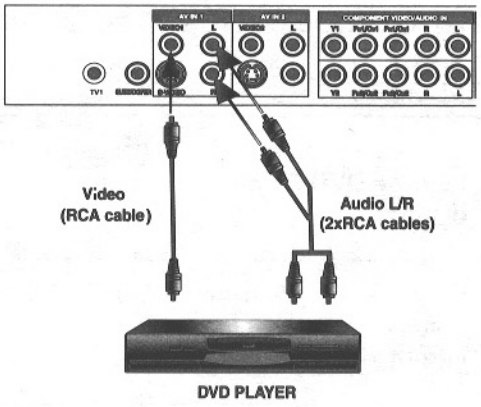
Note:

- There are two sets of S-Video inputs provided.

Using Composite Input

1. Connect the yellow (video) out connector from the DVD Player to the yellow video input on the back of monitor.

2. Connect the red (R) and white (L) audio-out jacks from the DVD Player to the R and L audio-in jacks located next to the yellow Video connector.



Note:

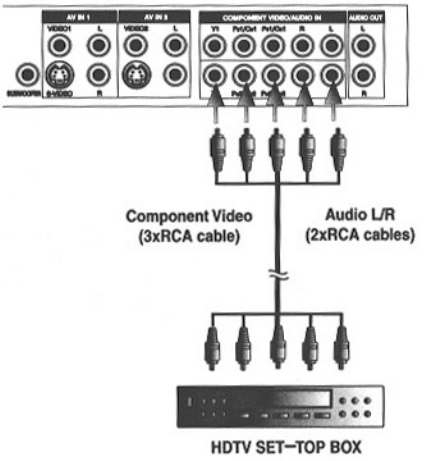
- There are two sets of composite inputs provided.

Connecting a Set-Top Box

Using Component Video Input

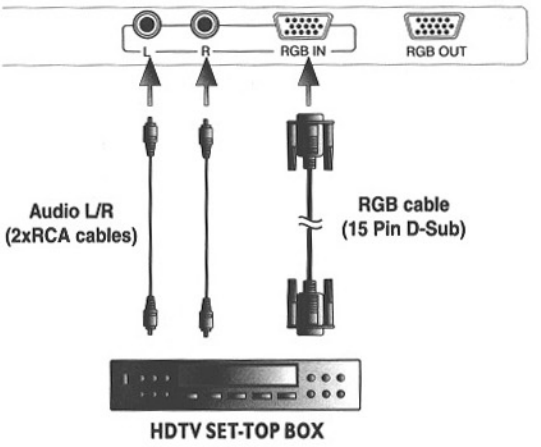
There are two sets of component video inputs provided. You can use either set of component inputs to connect your STB. Some HDTV Set top boxes may not have a Component Video output. Instead, use RGB or DVI input method.

1. Connect the green-colored (labeled as Y) jack from the STB to the green-colored jack of the monitor.
2. Connect the red-colored (labed as Pr or Cr) jack from the STB to the red-colored Pr1/Cr1 jack of the monitor.
3. Connect the blue-colored (labed as Pb or Cb) jack from the STB to the blue-colored Pb1/Cb1 jack of the monitor.
4. Connect the red (R) and white (L) audio jacks from the STB to the R and L audio-in jacks located next to the Pr/Cr1 connector.



Using RGB Input

1. Connect the 15-pin D-Sub RGB connector from the back of the HDTV set top box to the RGB-IN Connector located on the back of the monitor.
2. Connect the red (R) and white (L) audio-out jacks from the HDTV set top box to the R and L audio-in jacks located next to the RGB connector.



Notes:

- Some HDTV Set top boxes may not have a RGB output. Use Component Video input or DVI input method if this is the case.
- Upon connecting your HDTV set top box to the RGB input of the monitor, it may be necessary to adjust various picture settings on the monitor to correctly match the output of the HDTV set top box. This is caused by the different video timings set by various HDTV set top box manufacturers. (See Page 40 for more information).

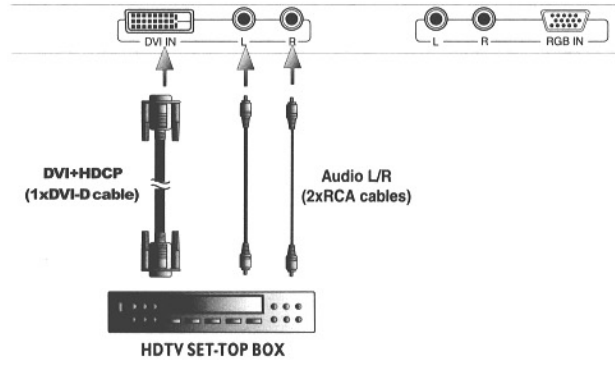
Display Connections

Connecting a Set-Top Box (con't)

Using DVI Input

1. Connect the DVI-D connector from the back of the HDTV set top box to the DVI-IN Connector located on the back of the monitor.

2. Connect the red (R) and white (L) audio-out jacks from the HDTV set top box to the R and L audio-in jacks located next to the DVI-D connector.



Notes:

- Some HDTV Set top boxes may not have a DVI output. Use Component Video input or RGB input method if this is the case.
- Upon connecting your HDTV set top box to the DVI input of the monitor, it may be necessary to adjust various picture settings on the monitor to correctly match the output of the HDTV set top box. This is caused by the different video timings set by various HDTV set top box manufacturers. (See Page 40 for more information).

External Audio Connections

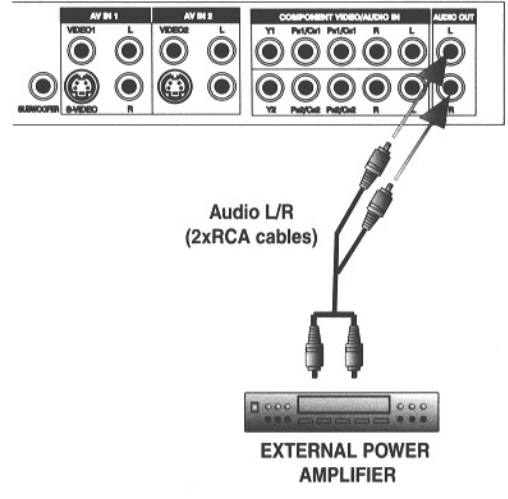
Connecting to an External Amplifiers

1. This monitor can be connected to an external amplifier using the AUDIO OUT jacks located on the back of the monitor.

2. Connect the red (R) and white (L) AUDIO OUT jacks from right side of the connector panel to the external amplifier.

Note:

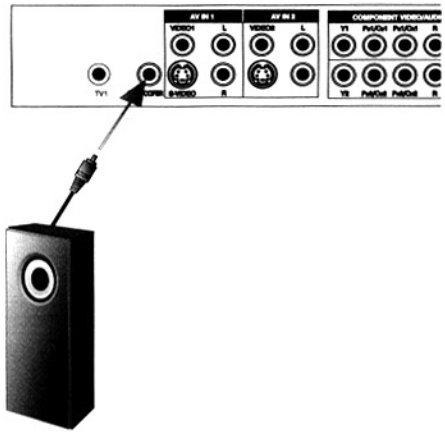
- The AUDIO OUT RCA jacks can be set to either Fixed or Variable audio output levels. (See Page 48 for more information)



Connecting a Subwoofer

This monitor is equipped with a subwoofer output for connecting to an external amplified subwoofer.

1. Connect a RCA cable from the subwoofer's input to the subwoofer's output jack on the back of the monitor.



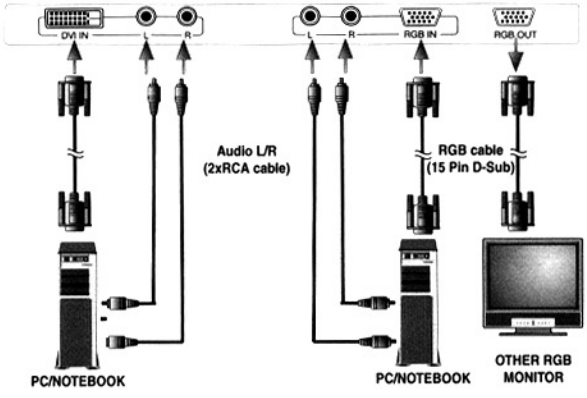
Notes:

- The RCA subwoofer outputs frequencies below 120Hz.
- The subwoofer output jack is governed by FIXED or VARIABLE audio output setting and works in conjunction with AUDIO OUT jacks.

Connecting a PC

Using RGB or DVI Video Input

1. For most PCs, connect the 15-pin D-Sub RGB connector from the back of the PC to the RGB-IN Connector located on the back of the monitor. If you have a PC that is equipped with a DVI (Digital Visual Interface), you may connect the PC DVI connector from the back of the PC to the DVI-In Connector located on the back of the monitor.



2. Connect the red (R) and white (L) audio jacks from the PC to the R and L jacks located next to the RGB connector. If you are using a DVI interface, simply connect the (R) and (L) audio jacks to the R and L jacks located next to the DVI connector.

Note:

- A RGB loop-out labeled RGB Out will allow another RGB monitor to be connected. The RGB loop-out will display the same signal as the RGB In signal source.

Connecting a PC (con't)

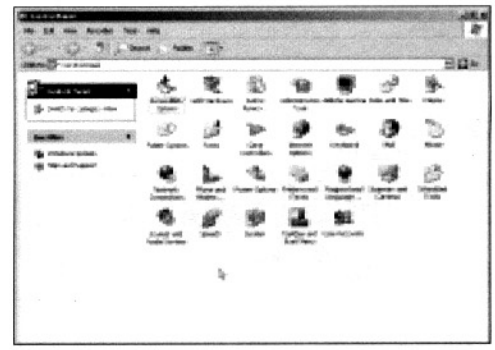
Setting Up Your Monitor Using Plug and Play

This monitor adheres to VESA Plug and Play standard to eliminate complicated and time consuming setup of monitors. This monitor identifies itself to the computer and automatically sends the PC its Extended Display Identification Data (EDID) using Display Data Channel (DDC) protocols.

How to Set up Your PC for Use with Monitor (Windows)

The display settings for a typical Windows-based computer are shown below; however, actual screens on your computer will differ depending on the version of Windows and video card equipped with the computer. Even though the actual screen may look different from example displayed below, basic set-up routine will apply in most cases.

1. Go to Window's CONTROL PANEL by clicking: START, SETTINGS, CONTROL PANEL. The CONTROL PANEL Window is displayed. Select the DISPLAY icon from this window.

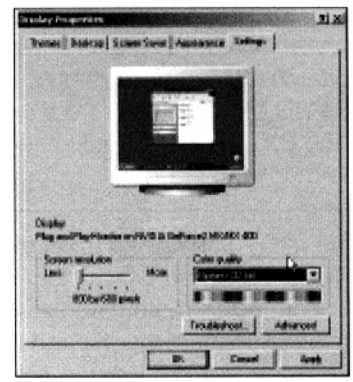


2. The DISPLAY PROPERTIES dialog box is displayed. Select the SETTINGS tab to display your computer's video output settings.

   Set the "Screen Resolution" settings to 640x480 PIXELS. For COLOR QUALITY, select 24 BIT COLOR (might also be expressed as 16 million colors).

   If a vertical-frequency option exists, set the value to 60 or 60 Hz.

   Click OK to complete the setting.



Note:

- Both screen position and size will vary, depending on the type of PC graphics card and its resolution selected. To adjust position and size, refer to Page 40.

Connecting a PC (con't)

Supported Resolutions

This monitor supports the following resolutions

Mode No.	Resolution	Refresh Rate (Hz)	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	V-Sync Polariy (TTL)	H-Sync Polarity (TTL)	Dot rate (MHz)
1	640(VGA) × 480	60	31.469	59.940	-	-	25.175
2	640(VGA) × 480	72	37.861	72.809	-	-	31.500
3	640(VGA) × 480	75	37.500	75.000	-	-	31.500
4	640(VGA) × 480	85	43.269	85.008	-	-	36.000
5	800(SVGA) × 600	56	35.156	56.250	+	+	36.000
6	800(SVGA) × 600	60	37.879	60.317	+	+	40.000
7	800(SVGA) × 600	72	48.077	72.188	+	+	50.000
8	800(SVGA) × 600	75	46.875	75.000	+	+	49.500
9	800(SVGA) × 600	85	53.674	85.061	+	+	56.250
10	1024(XGA) × 768	60	48.364	60.004	-	-	65.000
11	1024(XGA) × 768	70	56.476	70.069	-	-	75.000
12	1024(XGA) × 768	75	60.023	75.029	+	+	78.750
13	1024(XGA) × 768	85	68.677	84.997	+	+	94.500
14	1280(SXGA) × 1024	60	63.981	60.020	+	+	108.00
18	720(DOS) × 400	70	31.469	70.087	+	-	28.322
19	640(VGA) × 480	50	31.469	50.030	-	-	25.175
20	1280(HDTV) × 720p	60	45.000	60.000	+	+	74.250
21	1920(HDTV) × 1080i	60(i)	33.750	60.000	+	+	74.250
22	640(VGA) × 350	70	31.469	70.087	-	+	25.175
23	852(WGA) × 480	60	31.413	59.835	-	-	30.000
24*	640 × 480	67	35.000	66.667	-	-	30.240
25*	832 × 624	75	49.725	74.550	-	-	57.283
26*	1152 × 870	75	68.681	75.062	-	-	100.000

Notes:

- Modes 24, 25 and 26 are for use with Apple Macintosh computers.

Display Connections

RS-232 Connection

Overview

This monitor is equipped with an RS-232 serial terminal for using the monitor with computer controls. The RS-232 serial terminal conforms to the RS-232C interface specification. The computer will require software application (such as HyperTerminal) which allows the computer to send and receive control data that can support the communication parameters described in this section.

Interface Parameters

These parameters are required to setup communications with the monitor.

Specification	RS-232C
Sync Method	Synchronous
Baud Rate	9600 bps
Parity	None
Character Length	8 Bits
Stop Bit	1 Bit

RS-232C Pint Layout

Pin 1 Received Line Signal Detector (Data Carrier Detect)
Pin 2 Received Data (RXD)
Pin 3 Transmit Data (TXD)
Pin 4 Data Terminal Ready (DTR)
Pin 5 Signal Ground
Pin 6 Data Set Ready (DSR)
Pin 7 Request To Send (RTS)
Pin 8 Clear To Send (CTS)
Pin 9 Ring Indicator

Command Format and Sequencing

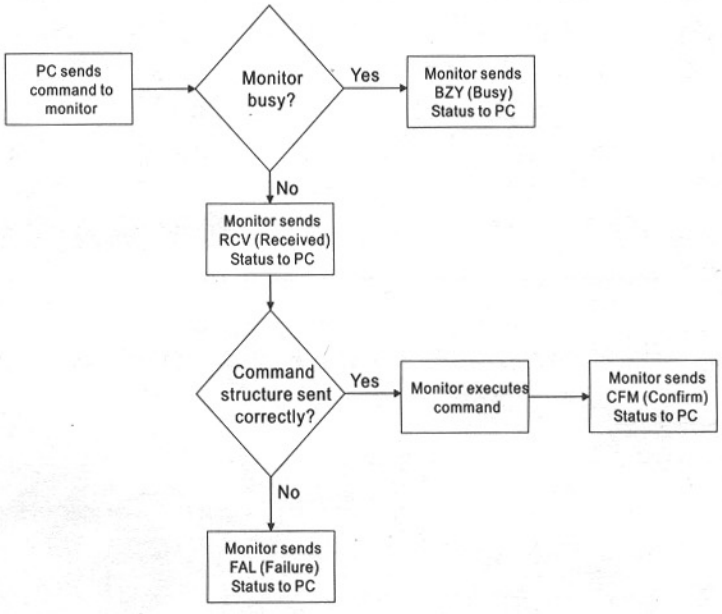
Data Structure Overview

In order to transmit data from the computer to the monitor, the data must be sent in a structured format. The format used by this monitor follows a COMMAND:DATA sequence. All commands and its related data are formatted using a 3-character format separated by a colon in-between. For example, the Power On command is sent as: PWR:PON where PWR is telling the monitor that it is receiving a Power related command, followed by the actual command to carry out.

Communications Overview

As commands are sent from the PC, the monitor will provide feedback regarding the state of command execution back to the PC. The monitor provides information status to inform:

1. Whether the command sent by the computer was received by the monitor.
2. Whether the COMMAND:DATA structure was correctly formatted for execution by the monitor.
3. Whether the command sent was successfully carried out by the monitor.



The following is an example of the communication process between the PC and the monitor using a program such as HyperTerminal.

Example: Read Power Status followed by Power On command and input select to AV1 with disruption

	PC Status		Monitor Status
>REA:PWR Enter	Send command to read power status	→	Monitor rcv's command
>RCV	Rcv acknowledgment of command received	←	Sends confirmation of command rcv'd to PC
>OFF	Rcv OFF status from monitor	←	Sends actual status of power to PC (OFF)
>CFM	Rcv confirmation of command complete	←	Sends confirmation of command completion
>PWR:PON Enter	Send command to POWER ON the monitor	→	Monitor is not busy and waiting for command
>RCV	Rcv acknowledgment of command	←	Sends confirmation of command rcv'd to PC
>CFM	Rcv confirmation of command complete	←	Monitor powers on and sends confirmation
>INP:AV1 Enter	Send command to switch to AV1 input	→	Monitor is busy doing another task
>BZY	Rcv acknowledge of command not accepted	←	Sends busy status because it can't rcv data
>ESC	Send command to void previous command	→	Rcv's command to clear previous command
>RCV	Rcv acknowledgment of command received	←	Sends confirmation of command rcv'd to PC
>CFM	Rcv confirmation of command complete	←	Clears command buffer and sends confirm
>INP:AV1 Enter	Send command to switch to AV1 input again	→	Monitor is not busy and rcv's command
>RCV	Rcv acknowledgment of command received	←	Sends confirmation of command rcv'd to PC
>CFM	Rcv confirmation of command complete	←	Monitor switches to AV1 and sends confirm
>	Ready to send another command		Monitor is ready to accept another command

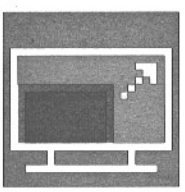
Command and Data Tables

Description	Command	Data Options
Read Data	REA	VOL, PWR, BRT, CON, CLR, TNT, SHP, INP, VSZ, VPS, HSZ, HPS, RCL, SAV, MUT, LNG, TMP, BAS, TRB, BAL, BBE, SRS, TS1, TS2, CSR, TV1, CCD, ZOM, PIP, POP PIS,POF, SIN, SWP, RGN, GGN, BGN, RBS, GBS, BBS, FPL, ILO, IUL, STS, BI1, BI2, BI3
Volume	VOL	001...100
Power On/Off	PWR	PON=Power On, OFF=Power off
Brightness	BRT	001...100
Contrast	CON	001...100
Color	CLR	001...100
Tint	TNT	001...100
Sharpness	SHP	001...100
Input Select	INP	TV1=Tuner1, AV1=AV Input 1, AV2=AV Input 2, CP1=Component Input 1, CP2=Component Input 2, RG1=RGB1, DV1=DVI1
V-Size	VSZ	001...100
V-Position	VPS	001...100
H-Size	HSZ	001...100
H-Position	HPS	001...100
Recall	RCL	000
Save	SAV	000
Mute	MUT	MON=On, OFF=Off
Language	LNG	ENG=English, SPA=Spanish, FFR=French
Color Temp	TMP	LOW=Low, MID=Middle, HIG=High, 65D=6500D, CUS=Custom
Bass	BAS	001...100
Treble	TRB	001...100
Balance	BAL	001...100
BBE	BBE	BON=BBE On, OFF=BBE Off
Surround Sound	SRS	OFF=Off, STR=Stereo, MON=Mono
Tuner 1 Source	TS1	AIR=Air, CBL=Cable
Channel Search	CSR	TV1=Channel Search TV1

Display Connections

Description	Command	Data Options
TV1 Channel Change	TV1	001...125
Closed Captioning	CCD	OFF, CC1, CC2, CC3, CC4, TX1, TX2, TX3, TX4
Zoom	ZOM	WID=16:9, PAN=Panorama Stretch, NOR=4:3 with black bars, ZO1=Zoom1, ZO2=Zoom2, ZO3=Zoom3
PIP	PIP	PON=PIP On, OFF=PIP Off
POP	POP	PON=POP On, OFF=POP Off
PIP Position	PIS	PS1=Position 1, PS2=Position 2, PS3=Position 3, PS4=Position 4
POP Format	POF	PF1=Full size, PF2=16:9 Format, PF3=4:3 Format
Sub-Source	SIN	TV1=Tuner 1, AV1=AV Input 1, AV2=AV Input 2, CP1=Component Input 1, CP2=Component Input 2, RG1=RGB1, DV1=DVI1
Sub-Swap	SWP	000
R-Gain	RGN	001...256
G-Gain	GGN	001...256
B-Gain	BGN	001...256
R-Bias	RBS	001...256
G-Bias	GBS	001...256
B-Bias	BBS	001...256
Clear Buffer	Escape Key	Simply press the ESC key on the keyboard will send command to clear command buffer

Basic Operations

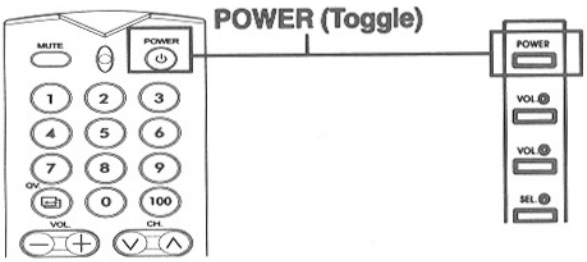


Powering On/Off

Using Front Panel or Remote Control

Make sure the monitor is plugged into the wall outlet and the main AC switch located on the rear of the monitor is switched to ON position. If the power is plugged in and the AC switch is on, the STATUS LED will illuminate in orange color.

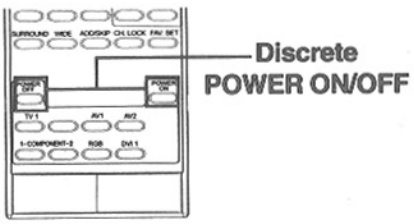
1. Press the POWER key on the panel or the remote control.
2. The monitor will now turn on after a brief pause. The STATUS LED will now turn green to indicate power on status.
3. To turn power off, simply press the POWER key on the panel or the remote control once again.



Using Discrete Power ON/OFF Keys

The discrete POWER ON/OFF keys send two discrete signals to the monitor, one for ON and one for OFF. Because signals are discrete, these keys can be used by third-party universal remote controls for macro programming.

1. To turn power on, simply press the POWER ON button. If the monitor is turned on already, pressing this button will have no effect.
2. To turn off power, simply press the POWER OFF button. If the monitor is already turned off, pressing this button will have no effect.

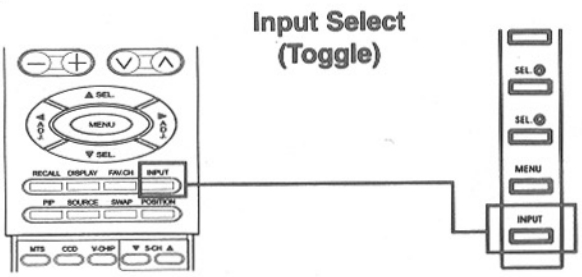


Changing Inputs

Using Front Panel or Remote Control

1. Press the INPUT key on the panel or the INPUT key on the remote control.
2. Pressing the INPUT key will cycle the monitor through all available input signal sources in the following order:

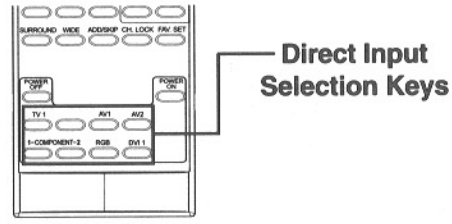
TV1 → AV1 → AV2 → COMPONENT1 → DVI ← RGB ← COMPONENT2



Using Direct Input Selection Keys

If you prefer not to cycle thru all available inputs, you can use the Direct Input Selection keys located towards the bottom of the remote control.

1. Simply select the input that you would like to switch to and press the Direct Input Selection key for that input.



Volume Adjustment

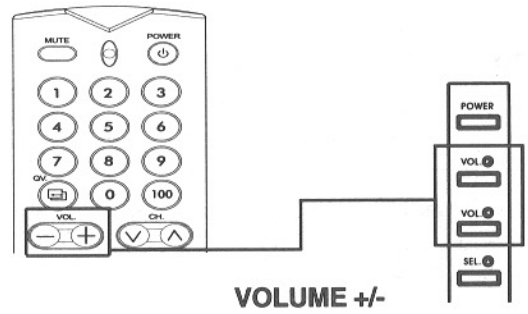
Using Front Panel or Remote Control

1. To turn up sound volume, press VOLUME + on either the front panel of monitor or on the remote control.

2. To turn down sound volume, press VOLUME - on either the front panel of monitor or on the remote control.

Note:

- If the monitor's built-in speakers are turned off, then volume controls will not affect volume generated by the built-in speaker.



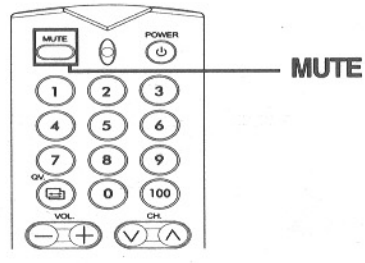
Using MUTE

1. If you would like to silence the volume on a temporary basis, simply press the MUTE key to silence the volume. When the monitors volume is muted, the monitor will display MUTE on the upper right corner of the screen.

2. To disengage the mute mode, simply press the MUTE key again or the volume buttons.

Note:

- If the monitor's built-in speakers are turned off, then volume controls will not affect volume generated by the built-in speaker.



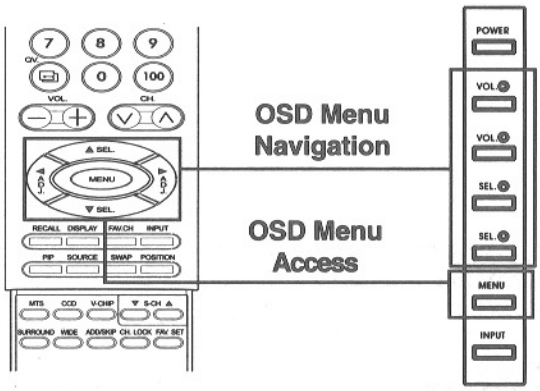
On-Screen Display Menu

Accessing OSD Menu via Remote Control or Front Panel

The On-Screen Display (OSD) menu allows access to setup various parameters equipped with this display.

1. To access the OSD menu, press (MENU) button on the front panel of monitor or press any one of the four arrow keys located on the remote control.

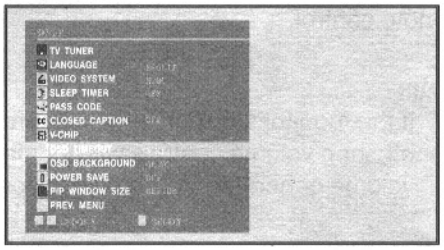
2. Navigation through the OSD Menu can be accomplished using the arrow keys on the remote control or using the front panel control keys.



OSD Menu Timeout Setting

OSD Menu will automatically disappear after a preset period of time so that it doesn't remain on the screen. To change the OSD timeout period, please follow the steps below.

1. Access the OSD menu, select SETUP submenu. Use keys to highlight OSD TIMEOUT.

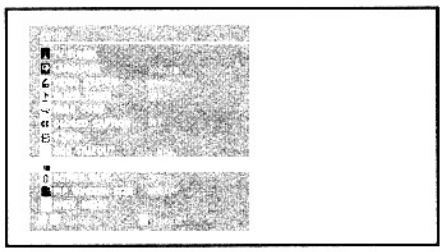


2. Use keys to adjust your settings. Select PREV MENU to return to previous menu.

OSD Background Color Setting

The background color of the OSD Menu can be customized. To change the OSD Background color setting, please follow the steps below.

1. Access the OSD menu, select SETUP submenu. Use keys to highlight OSD BACKGROUND.



2. Use keys to adjust your settings.
Select PREV MENU to return previous menu.

On-Screen Status Display

Displaying Status

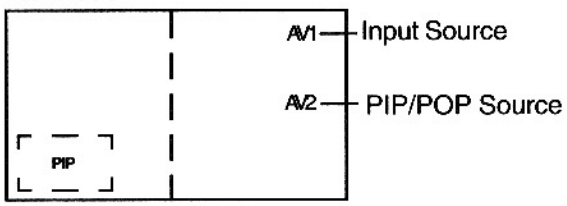
The On-Screen Status Display shows detailed information regarding the operational status of the monitor. The status display automatically appears whenever there is a change in the state of the monitor such as channel change or input change. The status display will automatically disappear after a timeout period.

1. To manually show the Status Display, simply press the DISPLAY key on the remote control.

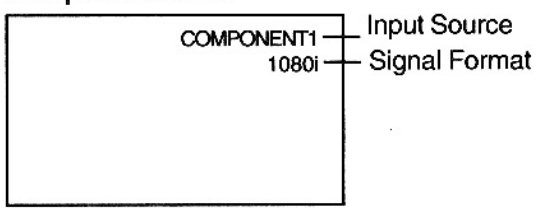
Note:

- When using AV1 and AV2, priority is given to the S-Video input.
- When using S-video connection AV1 and AV2, the status display will denote "[S]" to indicate the input source is using S-Video connector.

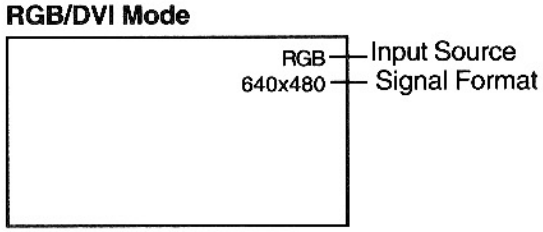
AV Mode



Component Mode



RGB/DVI Mode



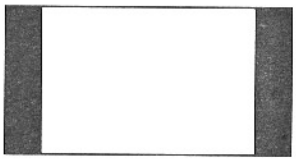
Basic Operations

Understanding Widescreen Modes

This monitor is capable of displaying a widescreen image on the native 16:9 aspect ratio screen. However, not all available video content fits perfectly in a widescreen (16:9) format resulting in unused screen space. This monitor is capable of displaying images in various formats that is suitable for various types of content depending on its size.

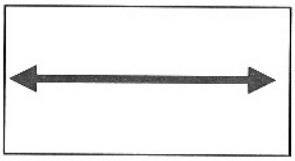
For 4:3 (Square) Content

Content from traditional TV, VCR, and some DVD's are formatted using a "square" 4:3 format. When viewing content in this "Square" format the following viewing modes are suitable.



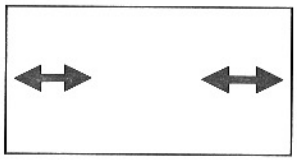
4:3 (NORMAL)

In 4:3 mode, the original 4:3 image is preserved but black bars are used to fill the the extra space on the left and right.



16:9 (FULL)

The original 4:3 image is proportionally stretched to fill the entire screen. This is the default setting from factory.

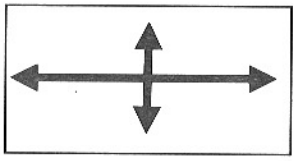


PANORAMA

The original 4:3 aspect ratio image is stretched in both the horizontal and vertical directions. The center of the picture is almost normal while the edges are considerably stretched.

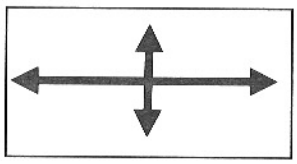
For Widescreen Content

Depending on the content displayed on this 16:9 monitor, you may notice smaller black bars on top or bottom of the screen. Use the following zoom modes to elimate black bars.



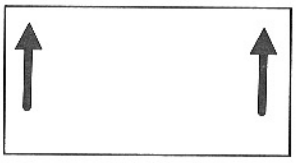
ZOOM: 1

Zoom 1 is set to stretch 1.85:1 content to full screen eliminating the black bars.



ZOOM: 2

Zoom 2 is set to stretch 2.35:1 content to full screen. This Zoom mode can also be used with images displayed in 2.0:1 aspect ratio.



ZOOM: 3

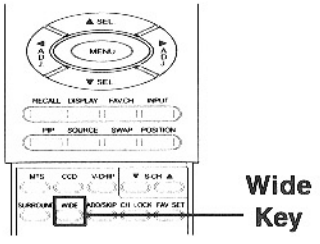
Zoom 3 shifts the image up to faciliate the display of sub-titles.

Changing Aspect Ratios

Using Remote Control

1. All widescreen viewing modes are available by pressing the WIDE key. Pressing this key repeatedly will cycle through all six modes:

   ·16:9WIDE ·4:3NORMAL ·PANORAMA
   ZOOM3 · ZOOM2 · ZOOM1 ·

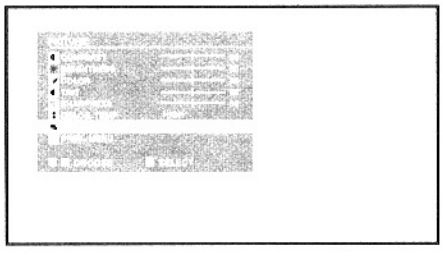


Note:

- Under RGB and DVI input modes, only 16:9 WIDE and 4:3 Normal modes are available.
- When displaying 480p, 1080i, and 720p signals under component video input, only 16:9 WIDE and 4:3 Normal modes are available.

Using OSD Menu

1. Access the OSD menu, select PICTURE submenu. Use keys to highlight FORMAT.

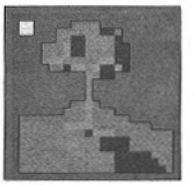


2. Use keys to select the desired format mode. As you select each mode, the screen changes. Select PREV MENU to return to previous menu.

Note:

- Under RGB and DVI input modes, only 16:9 WIDE and 4:3 Normal modes are available.
- When displaying 480p, 1080i, and 720p signals under component video input, only 16:9 WIDE and 4:3 Normal modes are available.

Picture Controls



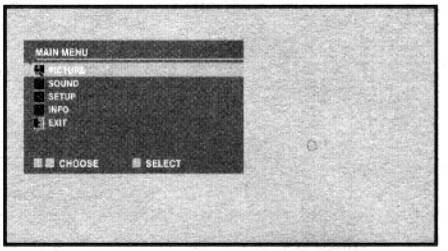
Picture Controls

Adjusting Picture Settings

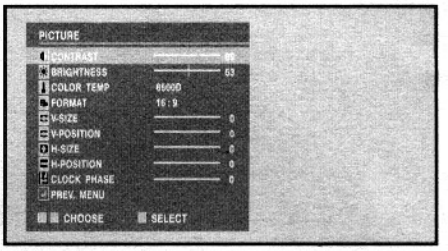
Using OSD Menu

Various picture adjustments can be set using the Picture Adjustment OSD menu.

1. Press the MENU on the front panel or remote control. Use ▲▼ to select the PICTURE option from the menu and press ▶ key to confirm selection.



2. Various picture settings are available from the PICTURE menu. Use ▲▼ to select the option that you wish to adjust .



Notes:

- H-Position, H-Size, V-Position, V-Size adjustments are only available in RGB, DVI, and Component input modes higher than 480i.
- When using TV1, AV1, AV2, Component 1 and Component 2 inputs with 480i signals, H-Size, H-Position, V-Position, V-Size settings are not available.
- To restore picture settings to factory default, simply press the RECALL key from the remote control when the PICTURE menu is displayed.

3. Use ◀▶ to change the setting. As you change the setting, changes in the picture are immediately reflected in the video picture. After achieving desired setting. Select PREV MENU to return to previous menu.

Explanation of Various Picture Control Settings

Explanation of each available picture control settings are listed in the table below.

CONTRAST
Adjust contrast to increase or decrease the level of white in the video picture. Increasing contrast will make white areas of the video picture brighter. Contrast works in conjuction with Brightness.

BRIGHTNESS
Adjust brightness to enhance the level of dark areas in the video picture such as night scenes and shadow scenes. Increasing brightness will make dark areas more visible.

COLOR
Use color to adjust the color saturation of the video picture. Increasing color will make the color more intense. Reducing color setting will make the color less intense.

TINT
Use tint to adjust the color of fleshtones. Increase in the right direction will shift the picture with more green in appearance. Decreasing setting in left direction will shift the picture with more red in appearance.

SHARPNESS
Use sharpness to adjust the amount of detail enhancement to the video picture. Increasing the setting will enhance the edges of objects in the video picture. Decreasing the setting will reduce enhancement.

COLOR TEMP
Select the color temperature for white balance. There are four settings to choose from: (1) 6500D - sets the white balance to 6500D; (2) LOW - sets to 5400K; (3) MID - sets to 9300K; (4) HIGH - sets to 13800K

FORMAT
Use to change various screen width modes. There are six modes to choose from: (1) 16:9, (2) 4:3, (3) Panorama, (4) Zoom 1, (5) Zoom 2, (6) Zoom 3.

V-SIZE
Use to change vertical size of the picture. Increase to enlarge the picture size in the vertical direction. Decrease to reduce the picture size in the vertical direction.

V-POSITION
Use to change vertical position of the picture. Increase to shift the picture up. Decrease to shift the picture down.

H-SIZE
Use to change horizontal size of the picture. Increase to enlarge the picture size in the horizontal direction. Decrease to reduce the picture size in the horizontal direction.

H-POSITION
Use to change horizontal position of the picture. Increase to shift the picture to the right. Decrease to shift the picture to the left.

CLOCK PHASE
Use clock phase to fine-tune the monitor to perfectly synchronize to the video signal source under RGB mode.

Notes:

- H-Position, H-Size, V-Position, V-Size adjustments are only available in RGB, DVI, and Component input modes higher than 480i.
- When using TV1, AV1, AV2, Component 1 and Component 2 inputs with 480i signals, H-Size, H-Position, V-Position, V-Size settings are not available.

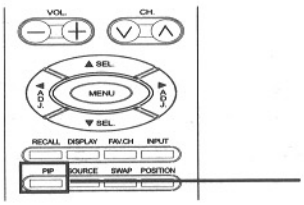
Picture-in-Picture / Side-by-Side Picture

Turning On PIP/Side-by-Side Picture (POP)

PIP and POP modes allow users to view two video input sources simultaneously.

1. Press the PIP key once on the remote control to engage in Picture-in-Picture mode. Pressing the key repeatedly will cycle thru the following modes:

PIP → POP → POP (4:3) → POP (16:9) → OFF → PIP

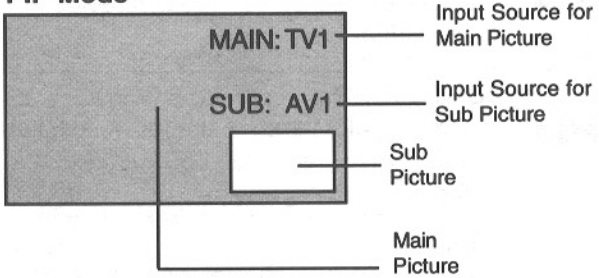


When engaged in PIP mode, a small window is displayed in one of the four corners. The OSD on the right half of the screen will denote the input selected for main picture (large screen) and the sub-picture (small screen) displayed.

Note:

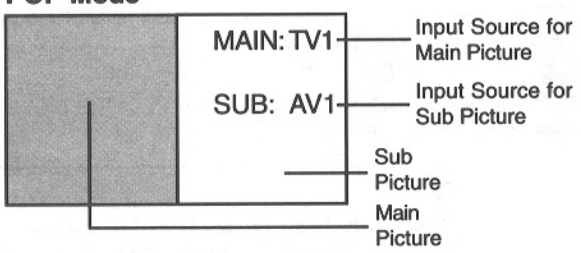
- Once PIP is turned off, the next time you return to PIP mode, the position of the sub-window will start at the last set position. If you restart the monitor, the position of the sub-window will start at default position.

PIP Mode



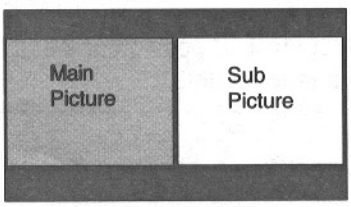
If switched to POP mode, the screen will be split in half. The screen on the left side is the main picture and the screen on the right is the sub-picture. The OSD on the right half of the screen will denote the input signal source for both the main and sub-pictures.

POP Mode

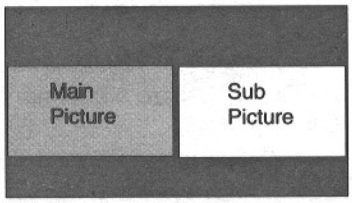


There are two Side-by-Side picture modes available in addition to the standard POP mode. POP (4:3) mode will display both main and sub-picture in a 4:3 aspect ratio within the POP windows. POP (16:9) mode will display both main and sub-picture in 16:9 aspect ratio within the POP windows.

POP 4:3 Mode



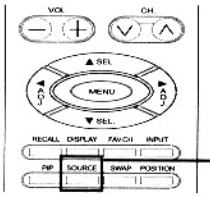
POP 16:9 Mode



Selecting Signal Source for Sub-Picture

Various signal sources can be displayed within the sub-window under PIP and Side-by-Side picture modes. To select the input source for sub-window, please follow the steps below.

1. Once the PIP mode is turned on, you can change the sub-picture input source by pressing the SOURCE key.



2. Pressing the SOURCE key repeatedly will cycle through all available inputs for the sub-picture.

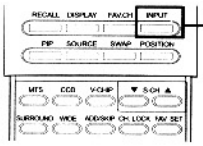
TV1 → AV1 → AV2 → COMPONENT1 → COMPONENT2 → RGB → DVI

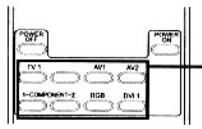
Note:

- Please see reference table below for available PIP/POP input combinations

Selecting Signal Source for Main Picture

1. Once the PIP mode is turned on, you can change the main picture input source by pressing the INPUT key or any one of the DIRECT INPUT KEYS.





Available PIP/POP Input Combinations

Main-picture and sub-picture input combinations are listed below for reference.

		Main Picture						
		TV 1	AV 1	AV 2	Comp 1	Comp 2	RGB	DVI
Sub-Picture	TV 1	-	✓	✓	✓	✓	✓	✓
	AV 1	✓	-	✓	✓	✓	✓	✓
	AV 2	✓	✓	-	✓	✓	✓	✓
	Comp 1	✓	✓	✓	-	✓	✓	✓
	Comp 2	✓	✓	✓	✓	-	✓	✓
	RGB	-	-	-	-	-	-	-
	DVI	-	-	-	-	-	-	-

Note:

- All digital TV signals (480i, 480p, 720p, 1080i) received via Component 1 or Component 2 inputs can be displayed in combination with TV or AV inputs.

Picture Controls

Picture-in-Picture / Side-by-Side Picture (Con't)

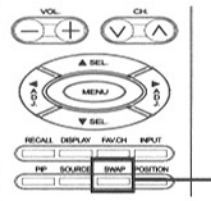
Main and Sub-Window Swap

You can swap the main picture and sub-picture.

1. Press the SWAP key once to swap. Press the SWAP key once again to switch back.

Note:

- The Swap function is not valid for RGB, DVI, and Component modes with signals higher than 480i.

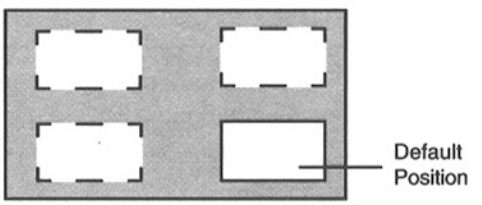


Changing Location of PIP Image

There are four preset positions where the PIP sub-window can be positioned. Once the PIP mode is turned on, you can switch the PIP sub-picture position to any one of the four corners of the screen.

1. Press the POSITION key to switch positions.
   Pressing the POSITION key repeatedly will cycle through all four corners of the screen.

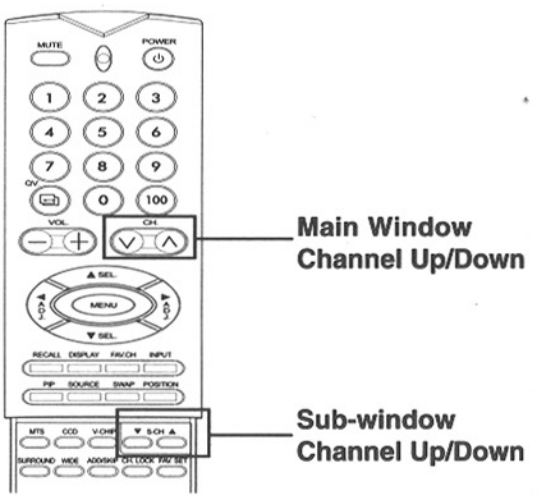
Sub-Picture Positions



Changing Channels in PIP/POP Mode

1. To change main window's TV channels, simply press the CH. key to change channels.

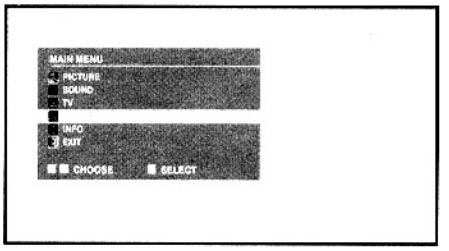
2. To change sub-window's TV channels, simply press the ▼ S-CH ▲ key to change channels.



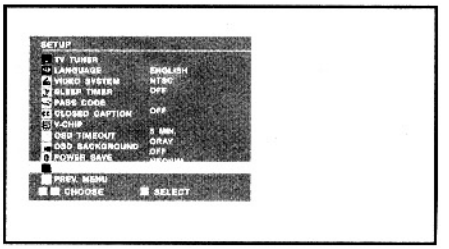
Changing Size of PIP Window

There are several PIP sub-window sizes available for selection.

1. Press the MENU on the front panel or remote control. Use CH/VOL to select the SETUP option from the menu and press ENTER key to confirm selection.



2. Various settings are available from the SETUP menu. Use CH/VOL to select the PIP WINDOW SIZE option from the menu .



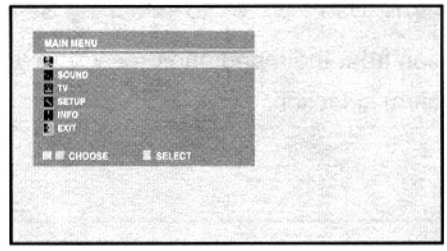
3. Use ◄ ► to change the setting. Select PREV MENU to return to previous menu.

Picture Controls

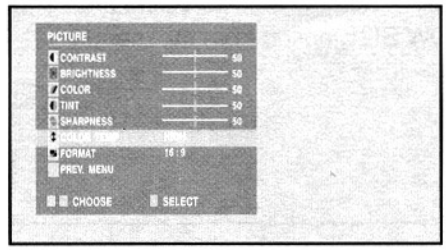
Selecting Color Temperature

This monitor is capable of applying various color temperatures (also known as White Balance) onto the video signal for display.

1. Press the MENU on the front panel or remote control. Use ▲ ▼ to select the PICTURE option from the menu and press ▶ key to confirm selection.



2. Various settings are available from the PICTURE menu. Use ▲ ▼ to select the COLOR TEMP option from the menu .



3. Use ◀ ▶ to change the setting. Select PREV MENU to return to previous menu.

Adjusting Screen Size

This monitor is equipped with signal auto-synchronization feature that automatically adjusts incoming video signals to fit the screen; therefore, V-POSITION and H-POSITION adjustments are disabled under certain Component, RGB and DVI inputs. The following table shows available adjustments for each video input:

Input	Signal Type	V-SIZE	V-POSITION	H-SIZE	H-POSITION
Component	480p	Disabled	Enabled	Enabled	Enabled
	720p	Disabled	Enabled	Enabled	Enabled
	1080i	Disabled	Enabled	Enabled	Enabled
RGB	VESA	Disabled	Enabled	Enabled	Enabled
	480p	Disabled	Enabled	Enabled	Enabled
	720p	Disabled	Enabled	Enabled	Enabled
	1080i	Disabled	Enabled	Enabled	Enabled
DVI	VESA	Disabled	Disabled	Disabled	Disabled
	480p	Disabled	Enabled	Disabled	Enabled
	720p	Disabled	Enabled	Disabled	Enabled
	1080i	Disabled	Enabled	Disabled	Enabled

In certain special cases, users may desire to manually adjust V-size. To do so, please use the following procedures:

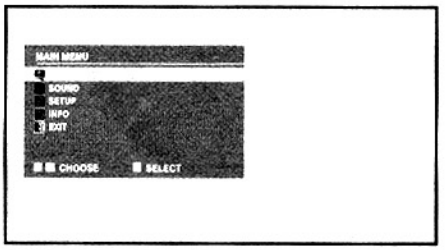
Press the (key 5 or more times and press the) key 5 or more times, then press the MUTE key.

V-SIZE will be enabled in OSD now, however this function will be locked again when users turn off the monitor.

Due to various PC video cards and set-top boxes with differing specifications, it is likely that the initial picture may not fit exactly to the size of the monitor. Please use the following procedures to adjust the picture size and position.

---

1. Press the MENU on the front panel or remote control. Use to select the PICTURE option from the menu and press key to confirm selection.



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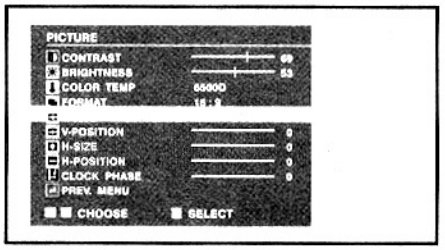
2. Various settings are available from the PICTURE menu. Use to select V-SIZE, V-POSITION, H-SIZE, or H-POSITION from the menu .



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3. Use ( ) to change the setting so that your video picture is best fit within the display area of the monitor. Select PREV MENU to return to previous menu.

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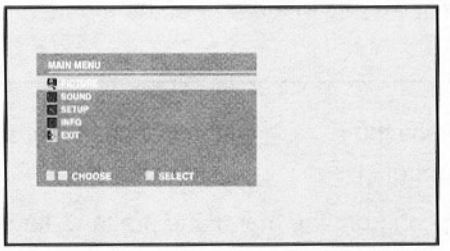
4. Repeat procedure for V-SIZE, V-POSITION, H-SIZE, and H-POSITION settings until video picture is fully displayed within the monitor's display area.

Picture Controls

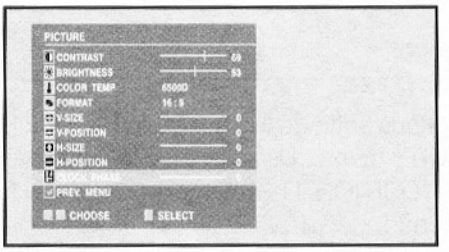
Fine Tuning RGB Mode

Due to various PC video cards and set-top boxes with differing specifications, it is likely that the initial video picture have subtle noise or imperfections. Please use the following procedures to adjust the picture quality when using under RGB mode.

1. Press the MENU on the front panel or remote control. Use ◁ ▷ to select the PICTURE option from the menu and press ▷ key to confirm selection.

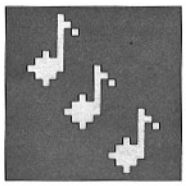


2. Use ◁ ▷ to select CLOCK PHASE option from the menu .



3. Use ◁ ▷ to change the setting so that your video picture is optimal. Select PREV MENU to previous menu.

Sound Controls



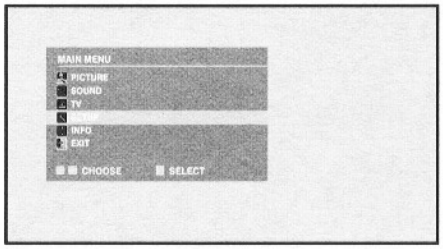
Sound Controls

Adjusting Sound Settings

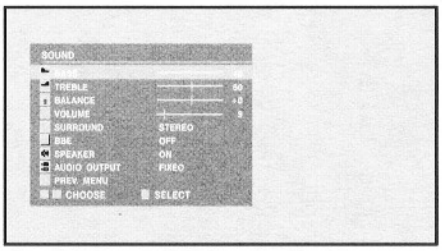
Using OSD Menu

Various sound adjustments can be set using the Sound Adjustment OSD menu.

1. Press the MENU on the front panel or remote control. Use ◄ ► to select the SOUND option from the menu and press ► key to confirm selection.



2. Various SOUND settings are available from the SOUND menu. Use ◄ ► to select the option that you wish to adjust .



3. Use ◄ ► to change the setting. After achieving desired setting . Select PREV MENU to return to previous menu.

Explanation of Various Sound Control Settings

Explanation of each available sound control settings is listed in the table below.

	**BASS** Adjusts the BASS level of the sound. For more bass response, increase the BASS level.
	**TREBLE** Adjusts the TREBLE level of the sound. For more vocal and high frequency response, increase the TREBLE level.
	**BALANCE** Adjusts the BALANCE level between LEFT and RIGHT channels.
	**VOLUME** Use to adjust the monitor's volume.
	**SURROUND** This monitor is equipped with Surround Sound circuitry. Use Surround Sound to simulate a surround sound effect if you are not using a multi-channel sound setup.
	**BBE** This monitor is equipped with BBE® Sound Maximizer circuitry. Use the BBE® Sound Maximizer when using the monitor to playback live performance related audio programs.
	**SPEAKER** Set to ON to turn on the monitor's internal amplification and internal speakers. Set to OFF to turn off internal amplification and speakers. This setting will not affect AUDIO OUTPUT jacks.
	**AUDIO OUTPUT** Sets the type of audio output sent from the audio output jacks located in the rear of monitor. When set to VARIABLE, audio output is affected by the monitor's internal volume controls . When set to FIXED, the audio output bypasses the monitor's internal audio control so that functions such as bass, treble, surround, BBE and volume controls have no effect.

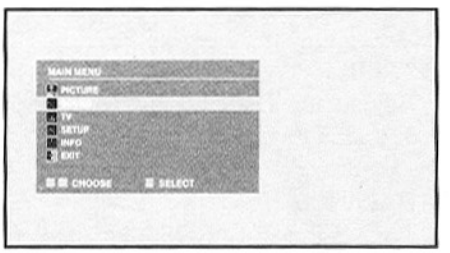
Sound Controls

Using Surround Sound

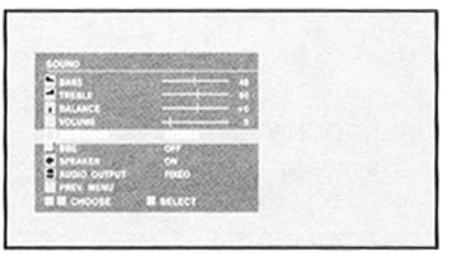
Turning On Surround Sound

This monitor is equipped with a surround sound circuitry that enhances the sound when using two speakers.

1. Press the MENU on the front panel or remote control. Use ◄► to select the SOUND option from the menu and press ▲ key to confirm selection.



2. Use ◄► to select the SURROUND option .



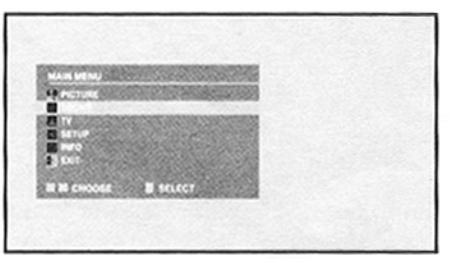
3. Use ▲▼ to change the setting. Select OFF setting to maintain normal stereo. Select STEREO to turn on surround circuitry. Select MONO to turn off stereo sound. After achieving desired setting . Select PREV MENU to return to previous menu.

Using BBE Sound

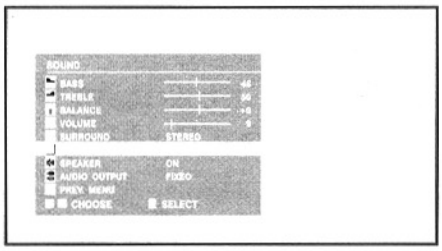
Turning On BBE Sound

This monitor is equipped with BBE® Sound Maximizer circuitry. Use the BBE® Sound Maximizer when using the monitor to playback live performance related audio programs.

1. Press the MENU on the front panel or remote control. Use ◄► to select the SOUND option from the menu and press ▲ key to confirm selection.



2 Use ⟨ ⟩ to select the BBE option .



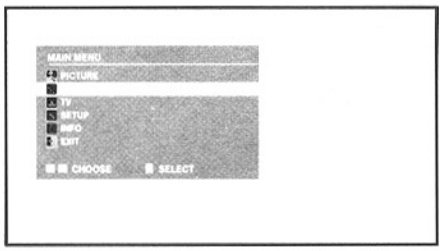
3 Use ⟨ ⟩ to change the setting. To turn on BBE, select ON position. After achieving desired setting, select PREV MENU to return to previous menu.

Built-in Amplification (Speaker)

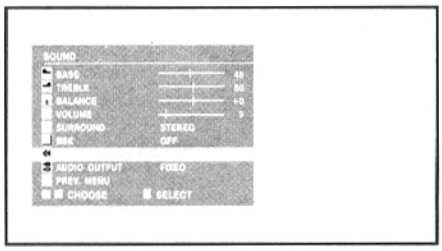
Turning On Built-in Amplification

This monitor is equipped with a built-in amplification for optional external speakers. You can switch the amplification ON or OFF using the OSD. Because these speakers are general purpose, you may consider switching them OFF during hi-fidelity playback of movies or other content.

1 Press the MENU on the front panel or remote control. Use ⟨ ⟩ to select the SOUND option from the menu and press ⟩ key to confirm selection.



2 Use ⟨ ⟩ to select the SPEAKER option .



3 Use ⟨ ⟩ to change the setting. To turn ON, select ON position. After achieving desired setting, select PREV MENU to return to previous menu.

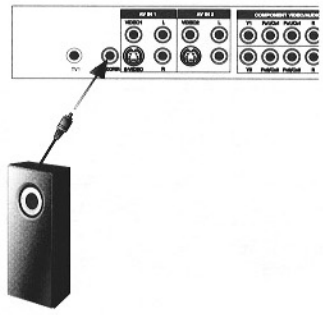
Sound Controls

Using an External Subwoofer

Connecting a Subwoofer

This monitor is equipped with a subwoofer output to connect to an external amplified subwoofer.

1. Connect a RCA cable from the subwoofer's input to the subwoofer's output jack on the back of the monitor.



Note:

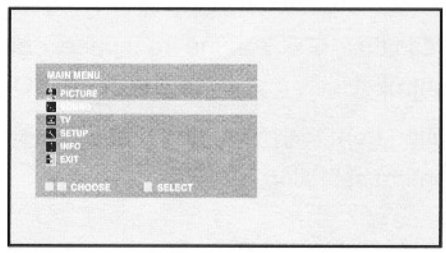
- The RCA subwoofer outputs frequencies below 120Hz.
- The subwoofer output jack is governed by FIXED or VARIABLE audio output setting and works in conjunction with AUDIO OUT jacks.

Fixed / Variable Audio Output

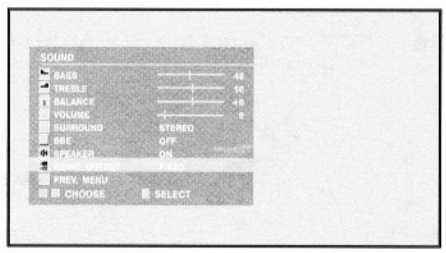
Setting Output Using OSD Menu

You can set the type of output this monitor outputs from its rear panel audio output jacks. By using OSD menu, you can easily choose between variable or fixed audio outputs.

1. Press the MENU on the front panel or remote control. Use ▽ △ to select the SOUND option from the menu and press ▷ key to confirm selection.

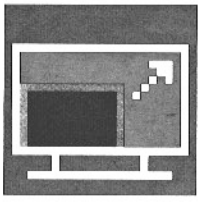


2. Use ▽ △ to select the AUDIO OUTPUT option .



3. Use ◁ ▷ to change the setting. When set to VARIABLE, audio output is affected by the monitor's internal audio controls. When set to FIXED, the audio output bypasses the monitor's internal audio controls. After achieving desired setting, select PREV MENU to return to previous menu.

Advanced Functions

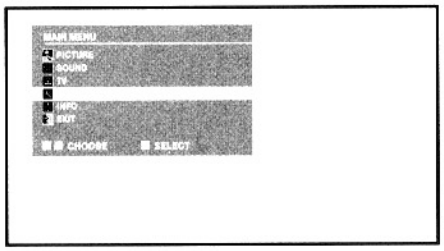


Sleep Timer

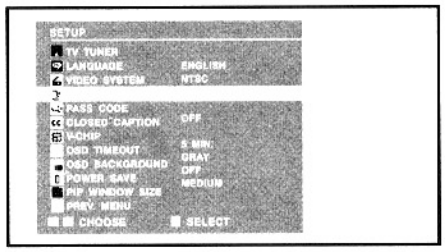
Setting Sleep Timer Using OSD Menu

This monitor has built-in sleep timer function. Once set, the monitor will automatically shut-off without user intervention.

1. Press the MENU on the front panel or remote control. Use ▲ ▼ to select the SETUP option from the menu and press ▶ key to confirm selection.

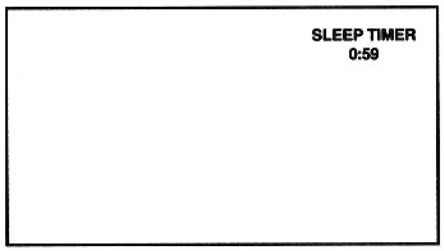


2. Various SETUP settings are available from the SETUP menu. Use ▲ ▼ to select the SLEEP TIMER option.



3. Use ◀ ▶ to change the setting. Available settings are: OFF, 15MIN, 30MIN, 45MIN, 60MIN, 90MIN, 120MIN. Select PREV MENU to return to previous menu.

4. The monitor will function normally until the 1-minute mark. At the 1-minute mark, the sleep timer will display a second by second count-down clock to notify that you that the monitor is about to turn off.

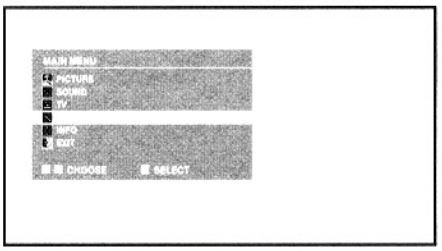


OSD Menu Language

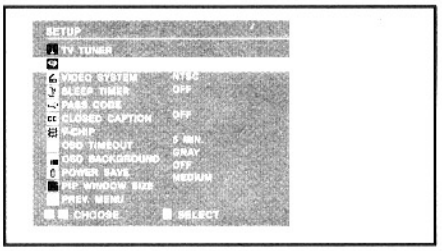
Setting OSD Menu Language

This monitor has multiple OSD Menu languages built-in including: English, French, Spanish, German and Italian.

1. Press the MENU on the front panel or remote control. Use ▲ ▼ to select the SETUP option from the menu and press ▶ key to confirm selection.



2. Various SETUP settings are available from the SETUP menu. Use ▲ ▼ to select the LANGUAGE option.



3. Use ◀ ▶ to select the desired OSD language. Available settings are: ENGLISH, FRENCH, SPANISH, GERMAN and ITALIAN. Select PREV MENU to return to previous menu.

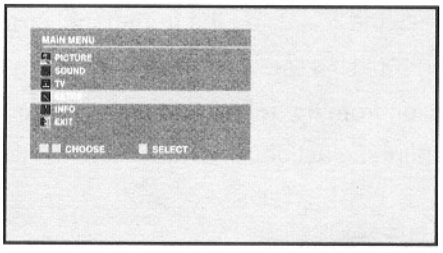
Advanced Functions

Power Save Mode

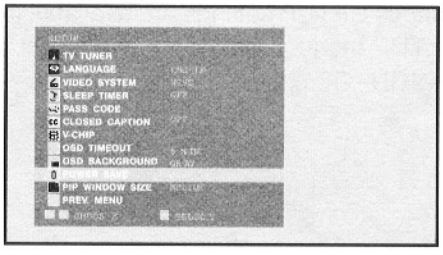
Setting Power Save Mode Using OSD Menu

This monitor is equipped with a Power Save mode under RGB or DVI input modes. When there are no signals detected by the monitor, the monitor will automatically go into sleep mode until the signal is restored.

1. Press the MENU on the front panel or remote control. Use ◁ ▷ to select the SETUP option from the menu and press ▷ key to confirm selection.



2. Various SETUP settings are available from the SETUP menu. Use ◁ ▷ to select the POWER SAVE option.



3. Use ◁ ▷ to select the desired amount of time for power down after a signal is no longer detected. Available settings are: 1MIN, 2MIN, 3MIN, 4MIN and 5MIN. Select PREV MENU to return to previous menu.

Note:

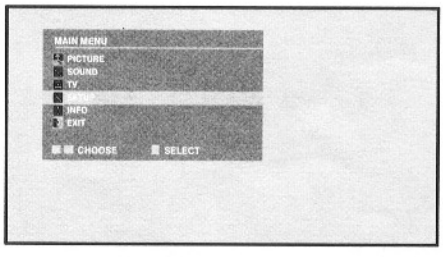
- To turn on the monitor from sleep mode, simply follow Power On procedure.

System Passcode

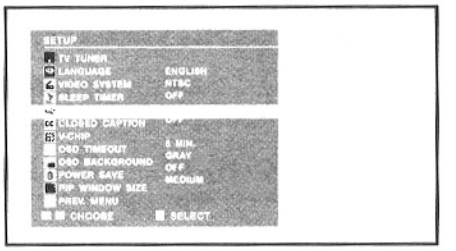
Setting System Passcode

The system passcode setting is used in conjunction with V-Chip (Parental Guide) and Channel Lock functions. The same security passcode is used for both functionality. By default, this monitor is shipped with the security passcode set at 0000.

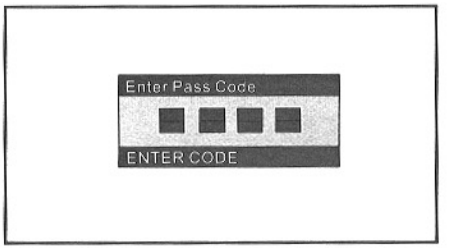
1. Press the MENU on the front panel or remote control. Use ◁ ▷ to select the SETUP option from the menu and press ▷ key to confirm selection.



2 Use ◁ ▷ to select the PASSCODE option.



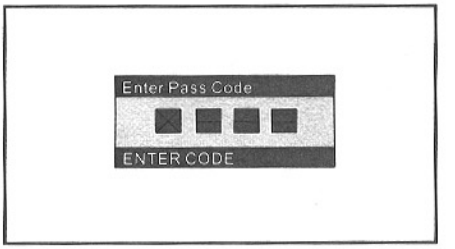
3 A small display window appears prompting the user to enter the existing passcode. Use the number keys on the remote control to input the code. If the code has not been set before, please use the default "0000" code.



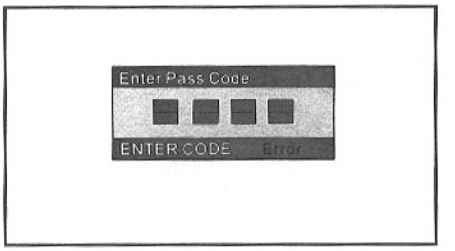
4 As each numeric digit is entered, a small "X" fills each slot. If the code entered is incorrect, an "Error" status is displayed. Simply re-enter the passcode again.

Notes:

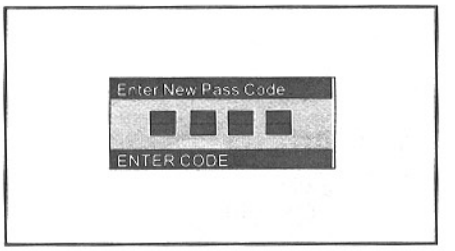
- When entering the 4-digit passcode, please enter the digits slowly. The monitor will display "X" in each of the number slots as it receives the passcode.
- If the wrong passcode is entered three times, the monitor will go back to the SETUP menu. Repeat the above procedure to reset your passode.



Error Condition



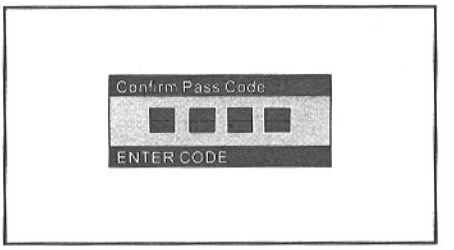
5 After the original passcode is entered correctly, the monitor will now prompt the entering of a new passcode. Enter a four digit passcode using the numeric keypad on the remote control.



6 Re-enter the new passcode one more time to confirm.

Note:

- If the wrong passcode is entered three times, the monitor will go back to the previous step and request a new passcode to be set again.



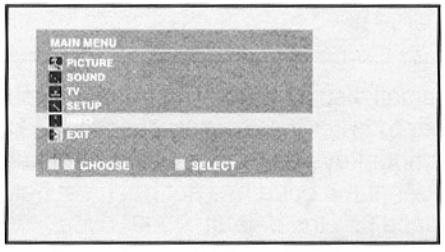
Advanced Functions

Information Display

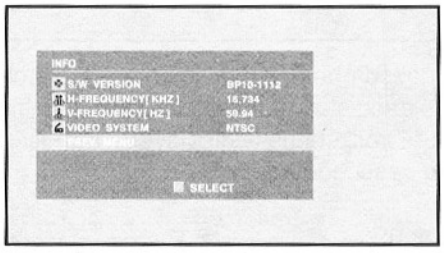
The information display sub-menu retains much useful information regarding the status of the monitor. Explanations for each type of information being displayed are listed below.

Accessing Information Display Menu

1. Press the MENU on the front panel or remote control. Use ▼ ▲ to select the INFO option from the menu and press ENTER key to confirm selection.



2. Various information is displayed in the INFO menu. To exit the INFO menu, use ▼ ▲ to select PREV. MENU option and press ENTER key to confirm exit.



Explanation of Information

S/W Version

Shows the monitor's firmware version number.

H-Frequency

Displays the horizontal scanning frequency of the signal being displayed.

V-Frequency

Displays the vertical scanning frequency of the signal being displayed.

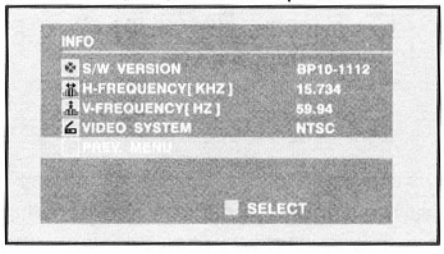
Video System

Displays the video system (NTSC) of the signal being displayed if the input source is set to TV, AV or Component 480i.

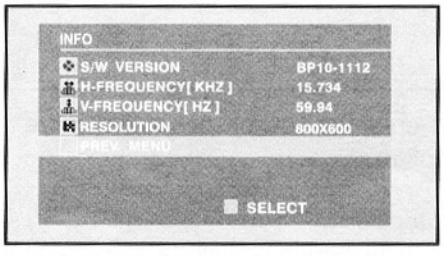
Resolution

Displays the resolution of the signal currently being displayed by the monitor if the input source is set to Component 480p, 720p, and 1080i, RGB, or DVI.

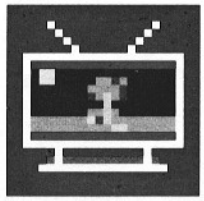
INFO - TV, AV, and Component 480i



INFO - Component 480p, 720p, and 1080i, RGB , and DVI



TV Functions



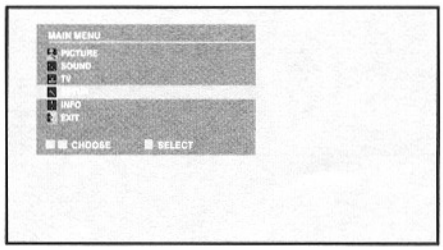
Memorizing Channels

If your monitor is equipped with an optional tuner module, you can program the monitor to automatically search for TV channels and storing the channels in memory.

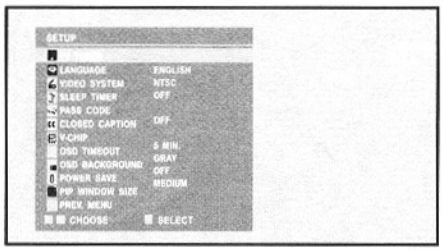
Setting Tuner to AIR or CABLE

The TV tuner is compatible with Cable TV or standard reception using an antenna. Users must setup the tuner to either AIR or CABLE reception modes prior to memorizing channels.

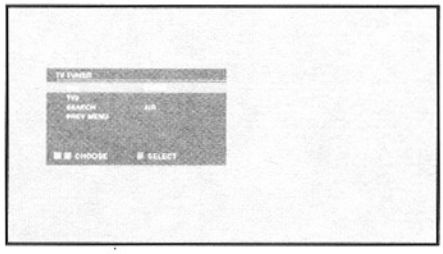
1. Press the MENU on the front panel or remote control. Use ▲ ▼ to select the SETUP option from the menu and press ► key to confirm selection.



2. Various SETUP settings are available from the SETUP menu. Use ▲ ▼ to select the TV TUNER option. Press ► key to confirm selection.



3. The TV TUNER setup menu is now displayed.

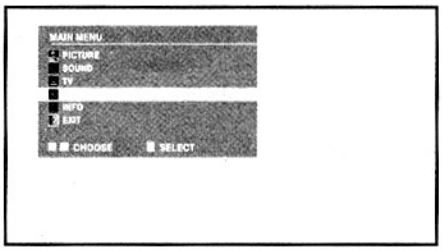


4. Use ◄ ► keys to set the to AIR or CABLE. If you are using an indoor/outdoor TV antenna, please select AIR. If you are using Cable TV, please select CABLE. When complete, use the ▲ ▼ keys to select PREV. MENU and press ► key to exit menu.

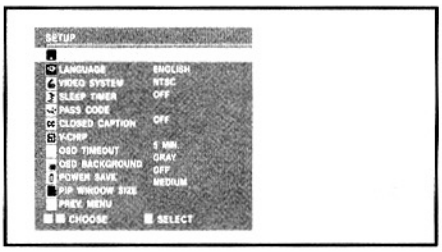
Channel Search

After setting the TV Tuner to either AIR or CABLE reception mode, use the monitor's internal channel search mode to automatically scan for available TV stations.

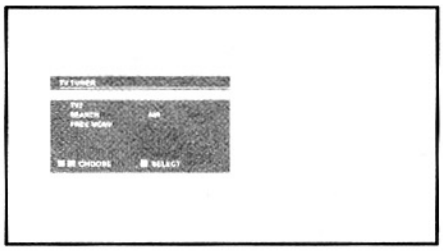
1. Press the MENU on the front panel or remote control. Use ◁ ▷ to select the SETUP option from the menu and press ▶ key to confirm selection.



2. Various SETUP settings are available from the SETUP menu. Use ◁ ▷ to select the TV TUNER option. Press ▶ key to confirm selection.



3. The TV TUNER setup menu is now displayed. Use ◁ ▷ keys to select SEARCH.



4. Press ▶ key to begin the channel search process. The monitor will now search all available channels. It may take several minutes for the search to complete. When the search is complete, the monitor will display 100% to indicate the search is finished.

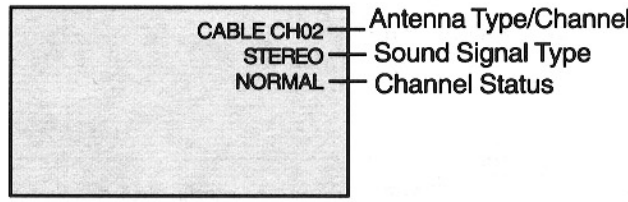
On-Screen Status Display (TV Mode)

Displaying Status

The On-Screen Status Display shows detailed information regarding the operational status of the monitor under TV mode. The status display automatically appears whenever there is a change in TV channels. The status display will automatically disappear after a timeout period.

1. To manually show the Status Display, simply press the DISPLAY key on the remote control.

TV Mode



Explanation of Channel Status

NORMAL
Channel is available for normal viewing.

ERASE
Channel is set to ERASE to make the channel un-available for viewing. When you use CH UP/DOWN keys to scroll thru channels, this channel will skip. However, this channel can still be tuned by manually keying the channel using the number keypad on the remote.

FAV
Channel is set to Favorite status so that it can be recalled using the FAV.CH key.

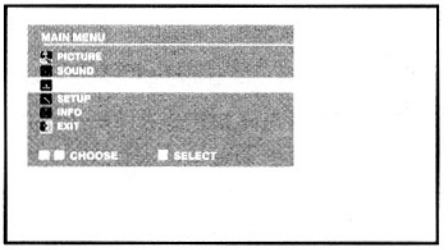
LOCK
Channel is set to LOCK to block the channel from viewing unless a passcode is set.

Blue Back

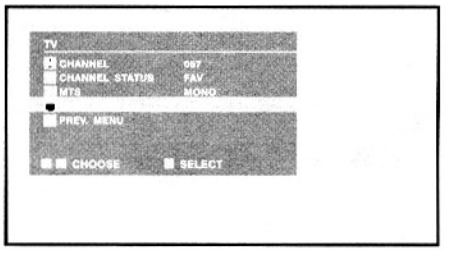
Turning on Blue Back

Blue Back setting eliminates the "snowflake" effect that results when a TV channel is not available by displaying a blue colored background.

1. Press the MENU on the front panel or remote control. Use ◁ ▷ to select the TV option from the menu and press ▷ key to confirm selection.



2. Various TV settings are available from the TV menu. Use ◁ ▷ to select the BLUE BACK option.



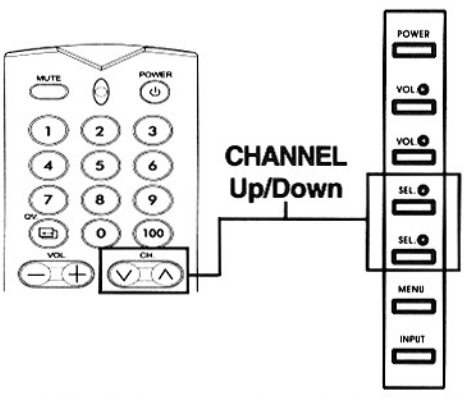
3. Use ◁ ▷ keys to select ON or OFF. Select PREV MENU to return to previous menu.

Changing Channels

Using Remote Control or Front Panel

To change TV channels, users can use either the remote control or the front panel keys.

1. Switch input to TV1. Press CH. button on the remote control. To use the front panel, press SEL UP/DOWN Keys to adjust the TV channel.

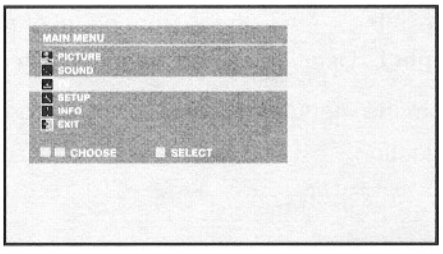


MTS

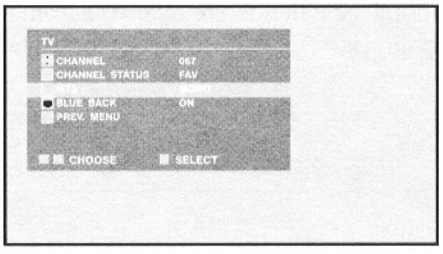
MTS option sets audio reception settings for the TV tuner. This function is also accessible using the remote control's MTS key. Pressing the MTS key will cycle the tuner through all available settings.

Accessing via OSD Menu

1. Press the MENU on the front panel or remote control. Use ▼CH ▲CH to select the TV option from the menu and press ▶VOL key to confirm selection.



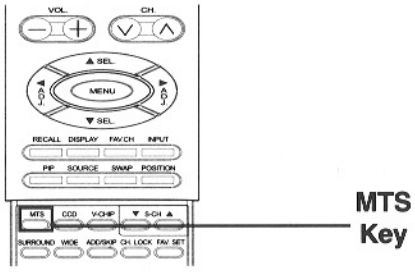
2. Use ▼CH ▲CH to select the MTS option .



3. Use ◀VOL ▶VOL to change the setting. Set status to **STEREO** to receive stereo reception from TV broadcasts when available (not all TV broadcasts are transmitted with stereo sound capability). Set status to **MONO** to set audio to mono mode.
Set status to **SAP** (Second Audio Program) to receive audio simulcasts in other languages (not all TV broadcasts are transmitted with second audio program). After selecting desired setting . Select PREV MENU to return to previous menu.

Accessing via Remote Control

1. Press the MTS key on the remote control repeatedly to cycle through all available audio modes.

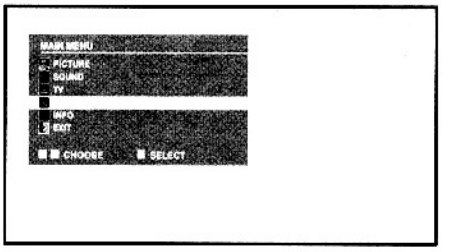


Closed Captioning

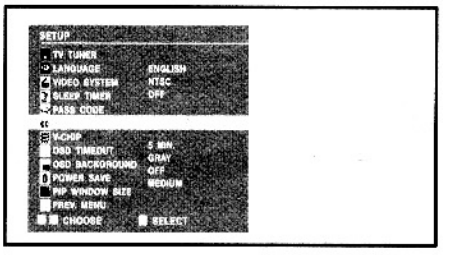
This monitor supports Closed Captioning feature by displaying various texts related to television programs on the display.

Accessing via OSD Menu

1. Press the MENU on the front panel or remote control. Use ◁ ▷ to select the SETUP option from the menu and press ▷ key to confirm selection.



2. Use ◁ ▷ to select the CLOSED CAPTION option .



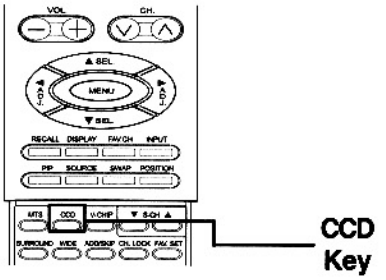
3. Use ◁ ▷ to change the setting. Available options are: **CCD1, CCD2, CCD3, CCD4, TEXT1, TEXT2, TEXT3, TEXT 4.** Select PREV MENU to return to previous menu.

Note:

- When PIP/POP is enabled, Closed Caption function will be disabled.

Accessing via Remote Control

1. Press the CCD key on the remote control repeatedly to cycle through all available Closed Captioning modes.



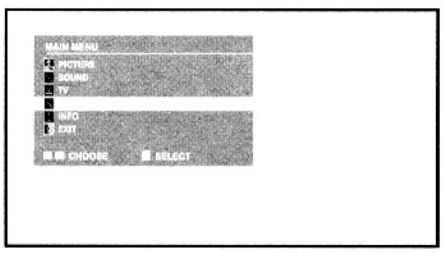
V-Chip

V-Chip (Parental Guide) function is to prevent children from watching programs that are not suitable such as violence or adult language. The user must enter a PASSCODE before any of the V-Chip restrictions are set up or changed.

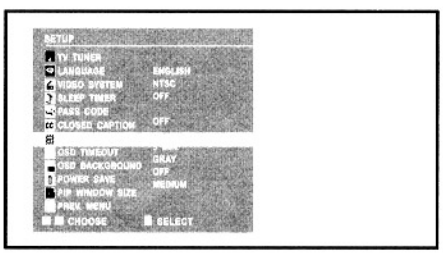
Enabling V-Chip

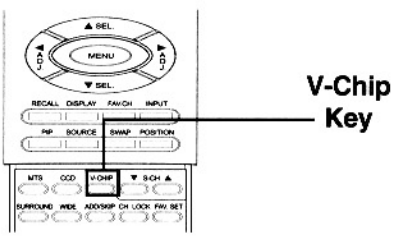
V-Chip is initially shipped from the factory set to OFF. To enable V-Chip, please follow the steps below.

1. Press MENU on the front panel or remote control. Use ▲CH ▼CH keys to select the SETUP option from the menu and press ▶VOL key to confirm selection.

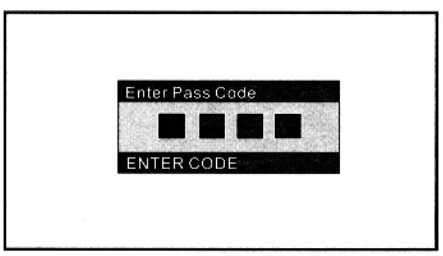


2. Use ▲CH ▼CH keys to select V-CHIP setting. Users can also use the remote control to access the V-CHIP option by pressing the V-CHIP key on the remote control.

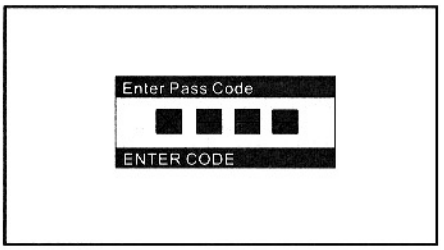




3. A window will now prompt the user to enter a PASSCODE using the remote control. If the default system PASSCODE has not been changed, enter 0000 (this is the initial default from factory).



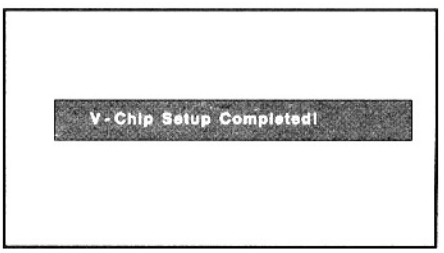
4 As each numeric digit is entered, a small "X" fills each slot. If the code entered is incorrect, an "Error" status is displayed. Simply re-enter the passcode again.



Notes:

- When entering the 4-digit passcode, please enter the digits slowly. The monitor will display "X" in each of the number slots as it receives the passcode.
- If the wrong passcode is entered three times, the monitor will go back to the SETUP menu.

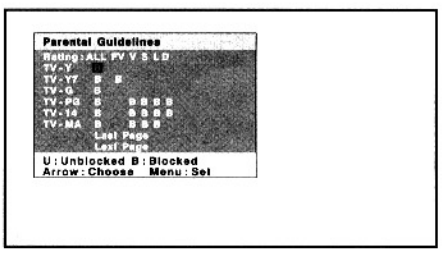
5 After the original passcode is entered correctly, the monitor will now show the V-Chip ON/OFF window. Use ( ) keys to select ON or OFF. After making selection, confirm your selection by pressing the MENU key. If ON is selected, please proceed to the next section. If OFF is selected, the monitor will display V-CHIP SETUP COMPLETED briefly and return user to normal viewing.



Setting Restrictions Using TV Guidelines

Prior to setting restrictions, users must first enable the V-Chip. After V-Chip is enabled, parental restrictions can be set using TV guidelines or the MPAA rating. This section covers setting restrictions using TV guidelines.

1 After V-Chip is enabled, users are presented with the TV Guidelines menu. Within this menu, there are six age-based categories:



TV-Y Young children
TV-Y7 Children 7 and over
TV-G General audience
TV-PG Parental guidance
TV-14 Viewers 14 and over
TV-MA Mature audience

In addition, you can choose to block all TV content for the entire age-based group or choose to block only certain types of content depending on their sub-ratings. For each age-based group, applicable sub-ratings may include:

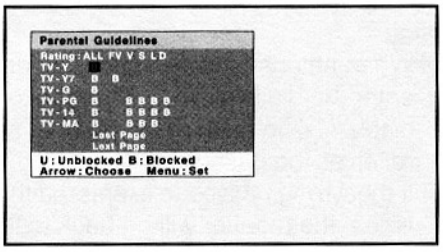
FV Fantasy Violence
D Sexual Dialog
L Adult Language
S Sexual Situations
V Violence

You will notice a letter U or letter B display. These letters represent the status block setting where U=Unblocked and B=Blocked.

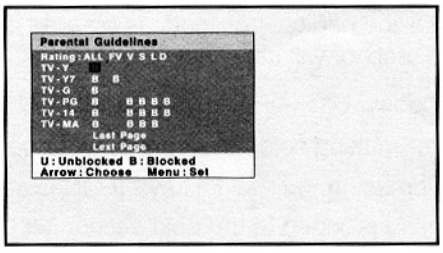
V-Chip (Con't)

Setting Restrictions Using TV Guidelines (Con't)

2. Use keys to navigate through each age-based group and sub-rating categories within this menu. Use the MENU key to set each available setting to either U or B. To set TV content restrictions for the entire age-based group regardless of sub-rating categories, simply set U or B under the ALL column.



3. When all desired settings are complete, navigate to NEXT PAGE option and press MENU key to complete your setting. Once this is complete, the monitor will prompt to the RESTRICTIONS USING MPAA RATING menu described in the next section.



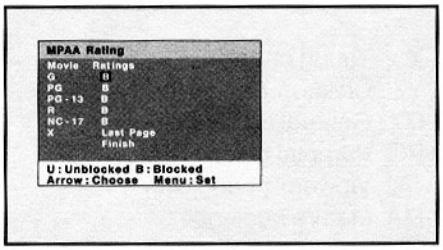
Note:

- V-Chip will automatically block higher categories that are more restrictive. For example, if users block TV-Y7 category, then TV-G and higher categories (TV-PG, TV-14, TV-MA) will automatically be blocked. The sub-ratings (D, L, S, V) also works similarly.

Setting Restrictions Using MPAA Guidelines

The MPAA guidelines uses the Motion Picture Association of America system for applying restrictions on movies being watched on the monitor. When the V-Chip is set to on, the monitor will automatically block all content that are coded with objectionable ratings as set using either MPAA or TV guidelines.

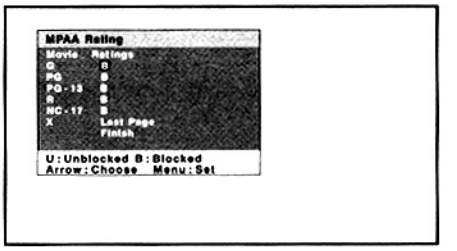
1. After TV Guidelines are set, users are presented with the MPAA Guidelines menu. Within this menu, there are seven MPAA categories:



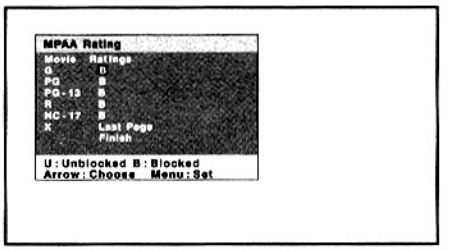
G	General Audience (No Restrictions)
PG	Parental Guidance
PG-13	Parents Strongly Cautioned
R	Restricted
NC-17	No One Under 17
X	Adults Only

For each category, you will notice a letter U or letter B display. U=Unblocked and B=Blocked.

2 Use ◄ ► keys to navigate through each category within this menu. Use the MENU key to set each category to either U or B.



3 When all desired settings are complete, navigate to FINISH option and press MENU key to complete your setting. Once this is complete, the monitor will display V-CHIP SETUP COMPLETE and return you to normal viewing.



Note:

- V-Chip will automatically block higher categories that are more restrictive. For example, if users block PG-13 category, then PG-13 and higher categories (R, NC-17, X) will automatically be blocked.

Using V-Chip

The V-Chip will block all incoming content that meets the guidelines set in the previous section. When this occurs, the monitor's screen will display "BLOCKED". To resume normal viewing, please change to a different TV channel. Under certain conditions , the V-Chip may block all channels. If this should occur, simply disable the V-Chip function.

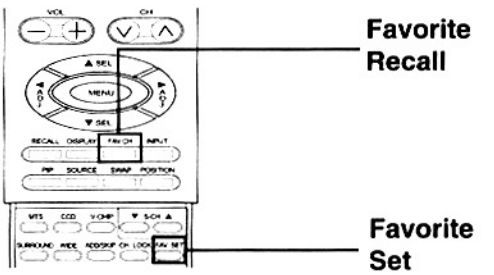
Note:

- When V-Chip is enabled, PIP/ POP functions will be disabled.

Favorite Channel Programming

Users can store favorite TV channels in memory for quick recall. To store and recall channels using Favorite Channels, please follow the steps below.

1 Use the CH. keys to scroll to the channel you wish to set as favorite channel. Press the FAV.SET key on the remote control. The selected channel is now set as part of the Favorite Channel selection.



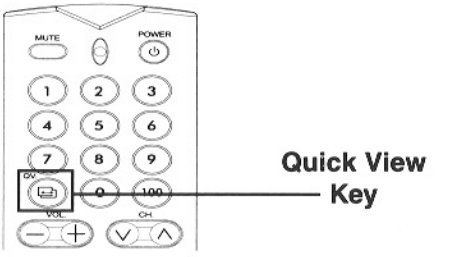
2 To watch your favorite Favorite Channel settings, press FAV.CH key to recall each channel. If you wish to remove the Favorite Channel setting, simply press FAV.SET key while displaying the channel you wish to remove.

TV Functions

Quick View

Quick View allows you to quickly switch between the channel currently watched and the channel previously watched.

1. Simply press the QV. key on the remote control to switch. Repeated pressing of the QV. key will switch the channels back and forth between the two.

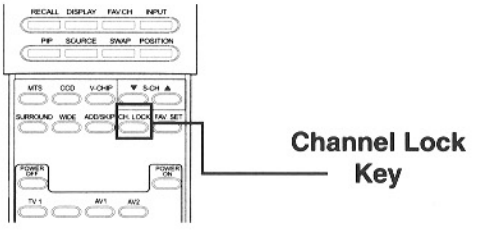


Channel Lock

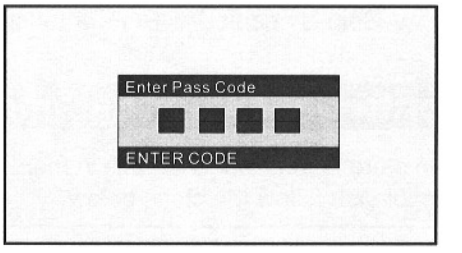
Setting Channel Lock

Set channel lock to block a TV channel from viewing.

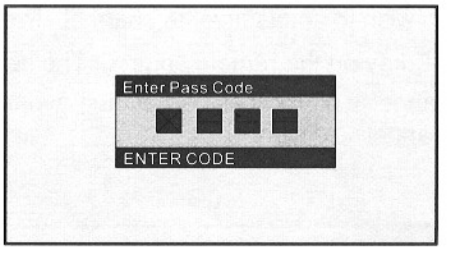
1. Use the CH. keys to scroll to the channel you wish to lock. Press the CH.LOCK key on the remote control.



2. A window will now prompt the user to enter a PASSCODE using the remote control. If the default system PASSCODE has not been changed, enter 0000 (this is the initial default from factory).



3. As each numeric digit is entered, a small "X" fills each slot. If the code entered is incorrect, an "Error" status is displayed. Simply re-enter the passcode again. After setting the passcode, restart the monitor by turning off and then on, the channel is now locked and viewing is not possible unless the same passcode is entered.



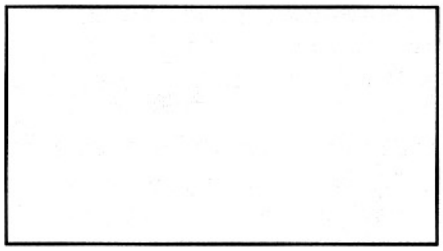
Notes:

- When entering the 4-digit passcode, please enter the digits slowly. The monitor will display "X" in each of the number slots as it receives the passcode.
- If the wrong passcode is entered three times, the monitor will go back to normal viewing state.

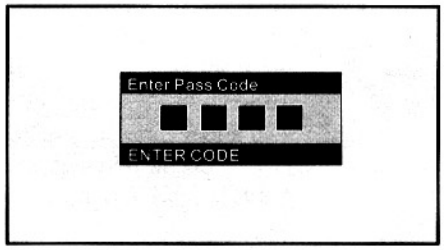
Viewing a Locked Channel

To watch a channel that is locked, please follow the steps below:

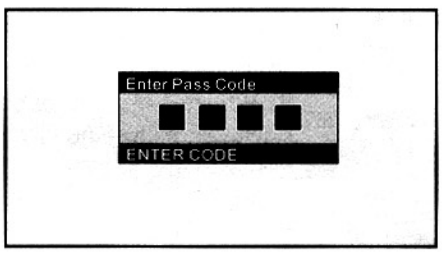
1. When a channel is locked and selected for viewing by the user, the screen will display CHANNEL LOCKED and will prompt the user to enter the same PASSCODE that was used to set the channel lock.



2. Enter the 4-digit PASSCODE using the numeric keypad on the remote control.



3. As each numeric digit is entered, a small "X" fills each slot. If the code entered is incorrect, an "Error" status is displayed. Simply re-enter the passcode again. After setting the passcode, the channel will be unlocked for viewing.



Notes:

- When entering the 4-digit passcode, please enter the digits slowly. The monitor will display "X" in each of the number slots as it receives the passcode.
- If the wrong passcode is entered three times, the monitor will go to the previously viewed channel.
- Once the passcode is entered correctly, the monitor will unlock all locked channels without prompting the entry of the passcode again until the monitor is powered off and on again.

Understanding HDTV

What is Digital Television or DTV?

Digital TVs are televisions that can receive and display digital television broadcasts sent using any one of three following categories: HDTV (High Definition TV), EDTV (Enhanced Digital TV), and SDTV (Standard Definition TV).

What is the Difference Between HDTV, EDTV, and SDTV?

HDTV, EDTV, and SDTV are three grades of televison or monitors. They reference the maximum resolution capability of a digital television or monitor to fully display digital broadcasts without having to down-convert the actual signal content to fit the monitors display limitations. The resolution requirements for each of the three DTV classifications and an explanation of the specifications are described below:

HDTV
HIGH DEFINITION TELEVISION

Vertical Res.[1]	Horizontal Res.[2]	Aspect Ratio[3]	Scan Method[4]
1080 lines	1920 dots	16:9 Wide	Interlaced
720 lines	1280 dots	16:9 Wide	Progressive

HDTV grade televisions and monitors are capable of displaying a maximum of either 1080 lines using interlaced scan method or 720 lines using progressive scan method.

EDTV
ENHANCED DEFINITION TELEVISION

Vertical Res.[1]	Horizontal Res.[2]	Aspect Ratio[3]	Scan Method[4]
480 lines	640 dots	4:3	Progressive

EDTV grade televisions and monitors are capable of displaying a maximum of 480 lines using progressive scan method. All resolutions higher than 480 lines must be reduced to 480 lines in order to be displayed. Progressive scan method reduces flicker; however, picture quality may not necessarily outperform 480 interlaced when viewed at normal viewing distances.

SDTV
STANDARD DEFINITION TELEVISION

Vertical Res.[1]	Horizontal Res.[2]	Aspect Ratio[3]	Scan Method[4]
480 lines	640 dots	4:3	Interlaced

SDTV grade televisions and monitors are capable of displaying a maximum of 480 lines using interlaced scan method. All resolutions higher than 480 lines must be reduced to 480 lines in order to be displayed.

[1]Vertical Resolution (Scan Lines)
Vertical scan lines refer to the number of horizontal lines a TV or monitor can display to create an image. As the number of lines increase, more information is displayed, resulting in better picture quality.

[2]Horizontal Resolution
Each horizontal line in a TV or monitor is made up of individual dots (pixels). The higher the number of pixels, the finer the TV picture becomes. Horizontal pixel measurements using today's technology can range from 250 for a VCR to as much as 500 for a DVD player.

[3]Aspect Ratio
Aspect ratio identifies the ratio of the TV screen's width over its height. A 16:9 aspect ratio refers to a wide-screen picture format, while a 4:3 refers to a standard square TV format.

[4]Scan Mode
Interlaced scanning is a method that creates a TV picture with alternating lines of information and is the cause for flickering. Progressive scanning is a method that creates a TV picture with consecutive lines of information that results in flicker-free picture quality.

How is a HDTV/EDTV/SDTV Different from a HDTV/EDTV/SDTV Monitor?

In order to receive digital broadcasts, a digital receiver or decoder must be used to receive and decode digital broadcast signals. Digital decoders can be built into the display itself or they may come in the form of a set-top box that is added separately to the display. HDTV/EDTV/SDTV Monitors are digital monitors without a digital decoder built into the television whereas HDTV/EDTV/SDTV Televisions are displays with a decoder built-in. HDTV/EDTV/SDTV Monitors give you the flexibility to add a digital decoder in the future when digital broadcasts are more prevalent.

What is "Down-Convert"?

Down-convert takes place when a digital broadcast signal exceeds the display capabilities of the display and the broadcast signal is reduced to match the television's limited display capabilities. For example, if a TV station broadcasts a digital program using 1080 lines (1080i format) while the display can only display 480 lines, the signal is reduced or down-converted to only 480 lines, resulting in lesser information being displayed.

This plasma monitor is qualified as an EDTV Monitor. This means that this monitor can display up to 480 lines using progressive scan format; therefore resolutions higher than 480 lines must be down-converted in order to be displayed. This EDTV Monitor includes advanced digital processing circuitry where the down-conversion process is done automatically while maximizing picture quality.

What is "Up-Convert"?

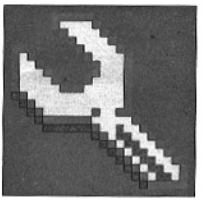
Up-convert takes place when a digital television's display capabilities exceed the digital broadcast signal and the broadcast signal is increased to match the TV's display capabilities. For example, if a TV station broadcasts a digital program using 480 lines and the digital television is able to display 1080 lines, the signal is increased or up-converted to match the TV.

This monitor includes advanced digital processing where all traditional analog television and video formats in the form interlaced signals are up-converted to 480 lines progressive scan method. Please note that up-conversion may result in some picture artifacts because information is being artificially added to the picture.

Is This Monitor Compatible with Digital TV / HDTV?

This monitor is compatible with digital TV. In order to receive digital television broadcasts, you will need to use a HDTV decoder or HDTV set-top box with component video output, RGB or DVI video output(s). Please consult your local sales representative prior to purchasing a HDTV decoder or HDTV set-top box.

Appendix



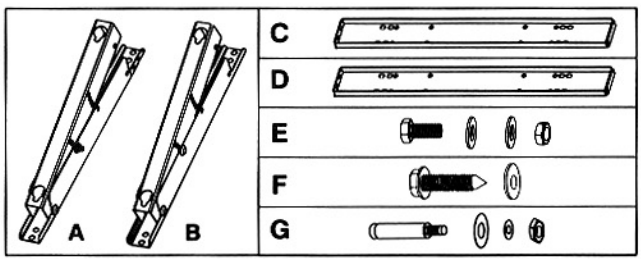
Appendix

The following list represents possible anomalies that you may encounter and methods for remedy. Please refer to this checklist prior to contacting a service representative.

Symptom	Possible Cause	Remedy
No picture is displayed	1. The power cord is disconnected. 2. The main power switch on the back of the monitor is not switched on. 3. The selected input has no connection. 4. The monitor is in standby mode in RGB mode.	1. Plug in the power cord. 2. Make sure the power switch is switched on. 3. Connect a signal connection to the monitor. 4. Press any key on your keyboard.
Interference displayed on the monitor or audible noise is heard	1. Caused by surrounding electrical appliances, cars/motorcycles or fluorescent lights.	1. Move the monitor to another location to see if the interference is reduced.
Color is abnormal	1. The signal cable is not connected properly.	1. Make sure that the signal cable is attached firmly to the back of the monitor.
Picture is distorted with abnormal patterns	1. The signal cable is not connected properly. 2. The input signal is beyond the capabilities of the monitor.	1. Make sure that the signal cable is attached firmly. 2. Check the video signal source to see if it is beyond the range of the monitor. Please verify its specifications with this monitor's specification section.
Display image doesn't fill up the full size of the screen	1. If under RGB mode, the H-Size and V-Size is incorrectly set. 2. If under TV, AV1, AV2, or Component with 480i input, the 4:3 WIDE mode is switched on.	1. Use H-Size and V-Size to adjust the size of the video. 2. Use the WIDE key to scroll through various full screen modes.
Can hear sound, but no picture	1. Improperly connected source signal cable.	1. Make sure that both video inputs and sound inputs are correctly connected.
Can see picture but no sound is heard	1. Improperly connected source signal cable. 2. Volume is turned all the way down. 3. MUTE is turned on.	1. Make sure that both video inputs and sound inputs are correctly connected. 2. Use VOLUME +/- to hear sound. 3. Switch MUTE off by using the MUTE button.
Some picture elements do not light up	1. Some pixels of the plasma display may not turn on.	1. This monitor is manufactured using an extremely high level of precision technology; however, sometimes some pixels of the monitor may not display. This is not a malfuction. Please see the enclosed warranty card for more information.
After-Images can still be seen on the monitor after the monitor is powered off. (Examples of still pictures include logos, video games, computer images, and images displayed in 4:3 normal mode)	1. A still picture is displayed for an over extended period of time.	1. Do not allow a still image to be displayed for an extended period of time as this can cause a permanent after-image to remain on the monitor.

1. Empty contents of the package.
Make sure the following items are present.

A. Left Wall Angle Module
B. Right Wall Angle Module
C. Horizontal Support
D. Horizontal Support
E. Screws for Fix Angle x 8
F. Screws for Wooden Wall Mounting x 8
G. Screws for Cement Wall Mounting x 8



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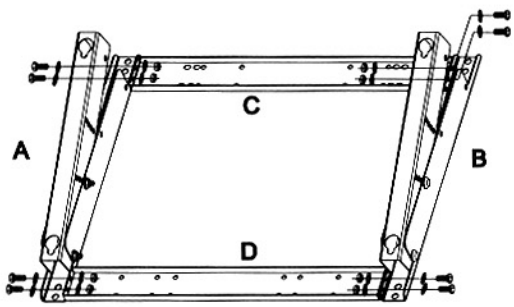
2. Attach Horizontal Supports (C and D) to the Left and Right Wall Angle Module (A and B) with screws (E).



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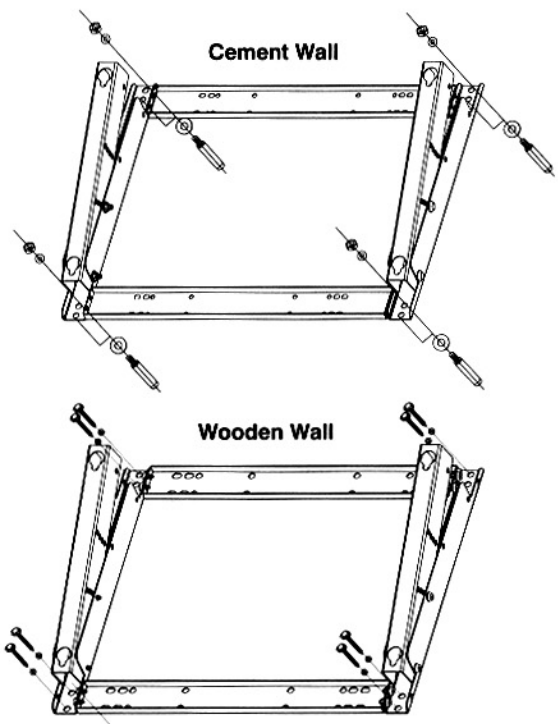
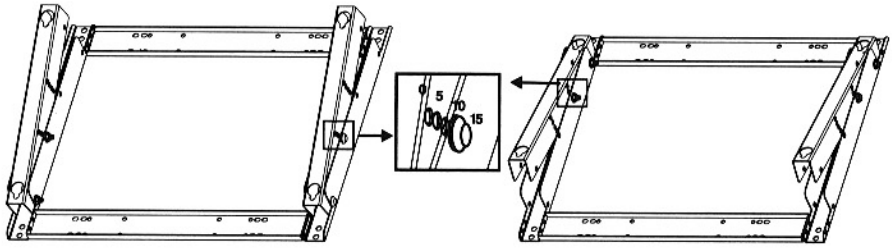
3. Install the Wall Mount Bracket onto the wall.

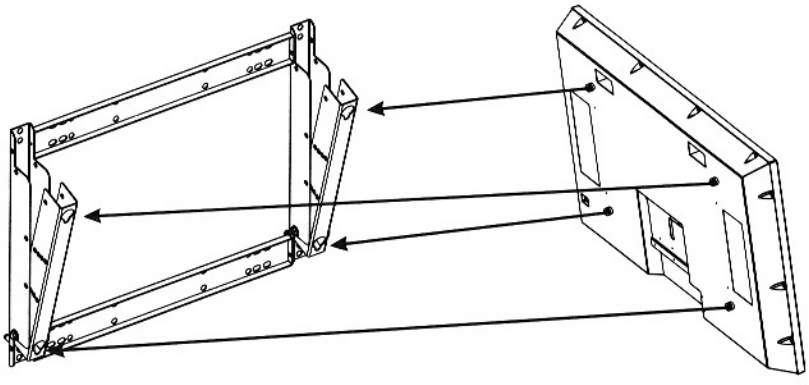
Note:
The screws in this package are for mounting onto a wooden or a cement wall. Different kind of walls needs different type screws. Please consult with a qualified installer to make sure your wall is capable of supporting this bracket and plasma monitor.



4 You can adjust the mounting direction and inclination angle (0, 5, 10, 15 degrees) by adjusting the screws position on the Wall Mounting Angle Module.



5 Remove the pedestal table-top stand on the unit, install the unit onto the wall mount bracket.



6
- Wall mount bracket is an optional accessory, please contact your local sales agent for more information.
- This type of equipment is to be installed by qualified installers, please contact with authorized dealer for installation.
- Please make sure that your wall is capable of supporting this wall mount and plasma monitor which can easily weigh over 120 kg (265 lbs.).

Display Panel

Screen size	42"
Aspect ratio	16:9
Number of pixels	852 (Horizontal) x 480 (Vertical) pixels
Pixel Pitch	1.095 (Horizontal)mm x 1.110 (Vertical)mm
Luminance	1000 cd/m² (1% white window at center)

Power Source

Input voltage	100 ~ 240Vac, 50 / 60Hz
Input current	3.8A
Inrush current	60A p-p/20ms Max.
Power consumption	380+/-10% Watts (at 110Vac/color bar pattern)
Stand-by	5 Watts Max. (at 110Vac)

Connection

Connector Types	RCA Jacks for audio, video, Y/C_B/C_R and Y/P_B/P_R
	4 pin Din S-terminal for S-Video
	9 pin D-SUB for RS-232
	15 pin D-SUB for RGB
	24 pin DVI

Video/S-Video Signal

Type	Analog
Polarity	Positive
Amplitude	Video: 1Vp-p
	S-Video: Y=1Vp-p, C=0.286Vp-p
Frequency	H: 15.734KHz V: 60Hz (NTSC)
Input impedance	75 ohms

Y/C_B/C_R or Y/P_B/P_R Signal (Component 1 & 2)

Type	Analog	
Polarity	Positive	
Amplitude	Y: 1Vp-p	
	C_B/P_B: 0.7Vp-p, C_R/P_R: 0.7Vp-p	
Frequency		
Y/C_B/C_R	H: 15.734KHz	V: 60Hz (NTSC)
Y/P_B/P_R: HDTV	H: 31KHz	V: 60Hz (480p)
	H: 45KHz	V: 60Hz (720p)
	H: 33KHz	V: 60Hz (1080i)

RGB Signal

Type	TTL
Polarity	Positive or Negative
Amplitude	RGB: 0.7Vp-p
Frequency	H: support to 31K ~ 91KHz
	V: support to 50 ~ 85Hz

DVI Signal

Type	Digital
Polarity	Positive or Negative
Frequency	H: support to 31K ~ 69KHz
	V: support to 50 ~ 85Hz

Audio Signal Analog 500mV rms/more than 22K ohm

Appendix

RGB/DVI

Mode No.	Mode	Resolution	H-Frequency (KHz) +/- 0.5KHz	V-Frequency (Hz) +/- 1Hz	Dot rate Polarity (MHz)	V-Sync Polarity (TTL)	H-Sync (TTL)
1	VGA	640 x 480@60Hz	31.469	59.940	25.175	-	-
2		640 x 480@72Hz	37.861	72.809	31.500	-	-
3		640 x 480@75Hz	37.500	75.000	31.500	-	-
4		640 x 480@85Hz	43.269	85.008	36.000	-	-
5	SVGA	800 x 600@56Hz	35.156	56.250	36.000	+	+
6		800 x 600@60Hz	37.879	60.317	40.000	+	+
7		800 x 600@72Hz	48.077	72.188	50.000	+	+
8		800 x 600@75Hz	46.875	75.000	49.500	+	+
9		800 x 600@85Hz	53.674	85.061	56.250	+	+
10	XGA	1024 x 768@60Hz	48.364	60.004	65.000	-	-
11		1024 x 768@70Hz	56.476	70.069	75.000	-	-
12		1024 x 768@75Hz	60.023	75.029	78.750	+	+
13		1024 x 768@85Hz	68.677	84.977	94.500	+	+
14	SXGA	1280 x 1024@60Hz	63.981	60.020	108.000	+	+
18	DOS	720 x 400@70Hz	31.469	70.087	28.322	+	-
19	VGA	640 x 480@50Hz	31.469	50.030	25.175	-	-
20	HDTV	1280 x 720p@60Hz	45.000	60.000	74.250	+	+
21	HDTV	1920 x 1080i@60Hz	33.750	60.000	74.250	+	+
22	VGA	640 x 350@70Hz	31.469	70.087	25.175	-	+
23	WGA	852 x 480@60Hz	31.413	59.835	30.000	-	-
24	OTHER	640 x 480@67Hz	35.000	66.667	30.240	-	-
25		832 x 624@75Hz	49.725	74.550	57.283	-	-
26		1152 x 870@75Hz	68.681	75.062	100.000	-	-

Notes:

- Modes 24, 25 and 26 are for use with Apple Macintosh computers.

Pin Assignments For D-SUB connector (in / loop out)

Pin	Signal Assignment	Pin	Signal Assignment	Pin	Signal Assignment	Pin	Signal Assignment
1	RED	4	GND	7	GREEN GND	10	GND	13	H-SYNC
2	GREEN	5	GND	8	BLUE GND	11	GND	14	V-SYNC
3	BLUE	6	RED GND	9	N.C.	12	SDA	15	SCL

Pin Assignments For 24 Pin DVI connector (digital only)

Pin	Signal Assignment	Pin	Signal Assignment	Pin	Signal Assignment
1	TMDS Data 2-	9	TMDS Data 1-	17	TMDS Data 0-
2	TMDS Data 2+	10	TMDS Data 1+	18	TMDS Data 0+
3	TMDS Data 2/4 Shield	11	TMDS Data 1/3 Shield	19	TMDS Data 0/5 Shield
4	TMDS Data 4-	12	TMDS Data 3-	20	TMDS Data 5-
5	TMDS Data 4+	13	TMDS Data 3+	21	TMDS Data 5+
6	DDC Clock	14	+5V Power	22	TMDS Clock Shield
7	DDC Data	15	Ground (For +5V)	23	TMDS Clock +
8	No Connect	16	Hot Plug Detect	24	TMDS Clock -

Y/PB/PR For Component 1 and 2

Mode	Resolution	Refresh Rate
1	640 x 480p	60
2	1920 x 1080i	60
3	1280 x 720p	60

Maximum Resolution Up to 1280 x 1024

Dimensions & Weight

	With/Stand	Without/Stand
Width	1081.1 mm	1081.1 mm
Height	736.0 mm	677.1 mm
Depth	279.4 mm	95 mm
Weight	80.5 lbs/36.5 kgs	76.5 lbs/34.7 kgs

Operating

Temperature	0 ~ 40°C (32 ~ 104°F)
Relative humidity	20 ~ 80%
Pressure	700 ~ 1114 hpa

Non-Operating

Temperature	-5 ~ 50°C
Relative humidity	20 ~ 80%
Pressure	600 ~ 1114 hpa
Vibration	X/Y/Z, 0.5G/10 ~ 55Hz(sweep), 10 minutes

Acoustics

(IHF A-weighted 1meter) 40dB Max.

Sound

Residual hum (at volume Max.)	500μW Max.
Practical Max. Audio output (at 10% THD Max.)	5W + 5W Max./12 ohm
Sound distortion (at 250 mw 1KHz)	1% Max.
Audio output (input at 1.4Vp-p)	>=1.0Vp-p

Reliability Requirement

The MTBF is 20,000 hrs. under operation 25 +/- 5°C (Half luminosity, motion picture)

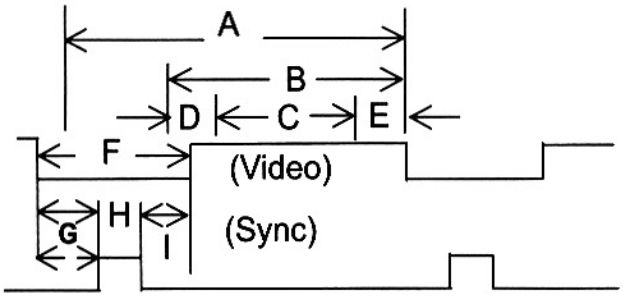
Emission Requirement

The unit shall meet the EMI limits in all screen modes as qualified by FCC class B part 15.

Power Management

Mode	H-sync	V-sync	Video	Power dissipation
Normal	Pulse	Pulse	Active	Normal power
Stand-by	No pulse	No pulse	No video	Less than 5 watts
Power saving	Pulse	No pulse	Blanked	Less than 55 watts
Power saving	No pulse	Pulse	Blanked	Less than 55 watts

Preset Timing Chart



Item	Description:
A	Total time
B	Active display area including borders
C	Active display area excluding borders
D	Left/Top border
E	Right/bottom border
F	Blanking time
G	Front porch
H	Sync-width
I	Back porch

Mode No	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	
H Resolution	640	640	640	640	800	800	800	800	800	
V Resolution	480	480	480	480	600	600	600	600	600	
Refresh Rate	60	72	75	85	56	60	72	75	85	Hz
Pixel Clock	25.175	31.500	31.500	36.000	36.000	40.000	50.000	49.500	56.250	MHz
Horizontal visible	640	640	640	640	800	800	800	800	800	Dots
Horizontal total	800	832	840	832	1024	1056	1040	1056	1048	Dots
Horizontal front porch	24	24	16	56	24	40	56	16	32	Dots
Horizontal sync	96	40	64	56	72	128	120	80	64	Dots
Horizontal back porch	40	120	120	80	128	88	64	160	152	Dots
Horiz blanking time	160	192	200	192	224	256	240	256	248	Dots
Vertical visible	480	480	480	480	600	600	600	600	600	Lines
Vertical total	525	520	500	509	625	628	666	625	631	Lines
Vertical front porch	18	17	1	1	1	1	37	1	1	Lines
Vertical sync	2	3	3	3	2	4	6	3	3	Lines
Vertical back porch	25	20	16	25	22	23	23	21	27	Lines
Vertical blanking time	45	40	20	29	25	28	66	25	31	Lines
Horizontal frequency	31.469	37.861	37.500	43.269	35.156	37.879	48.077	46.875	53.674	KHz
Vertical frequency	59.940	72.809	75.000	85.008	56.250	60.317	72.188	75.000	85.061	Hz
Vertical sync polarity	-	-	-	-	+	+	+	+	+	TTL
Horiz sync polarity	-	-	-	-	+	+	+	+	+	TTL

Mode No	**10**	**11**	**12**	**13**	**14**	**18**	**19**	**20**	**21**	
H Resolution	1024	1024	1024	1024	1280	720	640	1280	1920	
V Resolution	768	768	768	768	1024	400	480	720p	1080i	
Refresh Rate	60	70	75	85	60	70	50	60	60i	Hz
Pixel Clock	65.000	75.000	78.750	94.500	108.000	28.322	25.175	74.250	74.250	MHz
Horizontal visible	1024	1024	1024	1024	1280	720	640	1280	1920	Dots
Horizontal total	1344	1328	1312	1376	1688	900	800	1650	2200	Dots
Horizontal front porch	24	24	16	48	48	18	16	70	44	Dots
Horizontal sync	136	136	96	96	112	108	96	40	44	Dots
Horizontal back porch	160	144	176	208	248	54	48	260	192	Dots
Horiz blanking time	320	304	288	352	408	180	160	370	280	Dots
Vertical visible	768	768	768	768	1024	400	480	720	540	Lines
Vertical total	806	806	800	808	1066	449	629	750	562.5	Lines
Vertical front porch	3	3	1	1	1	12	62	5	3	Lines
Vertical sync	6	6	3	3	3	2	2	5	2	Lines
Vertical back porch	29	29	28	36	38	35	85	20	18	Lines
Vertical blanking time	38	38	32	40	42	49	149	30	23	Lines
Horizontal frequency	48.364	56.476	60.023	68.677	63.981	31.469	31.469	45.000	33.750	KHz
Vertical frequency	60.004	70.069	75.029	84.997	60.020	70.087	50.030	60.000	60.000	Hz
Vertical sync polarity	-	-	+	+	+	+	-	+	+	TTL
Horiz sync polarity	-	-	+	+	+	-	-	+	+	TTL

Mode No	**22**	**23**	**24**	**25**	**26**	
H Resolution	640	852	640	832	1152	
V Resolution	350	480	480	624	870	
Refresh Rate	70	60	67	75	75	Hz
Pixel Clock	25.175	30.000	30.240	57.283	100.000	MHz
Horizontal visible	640	852	640	832	1152	Dots
Horizontal total	800	955	864	1152	1456	Dots
Horizontal front porch	16	19	64	32	32	Dots
Horizontal sync	96	48	64	64	128	Dots
Horizontal back porch	48	36	96	224	144	Dots
Horiz blanking time	160	103	224	320	304	Dots
Vertical visible	350	480	480	624	870	Lines
Vertical total	449	525	525	667	915	Lines
Vertical front porch	37	10	3	1	3	Lines
Vertical sync	2	2	3	3	3	Lines
Vertical back porch	60	33	39	39	39	Lines
Vertical blanking time	99	45	45	43	45	Lines
Horizontal frequency	31.469	31.413	35.000	49.725	68.681	KHz
Vertical frequency	70.087	59.835	66.667	74.550	75.062	Hz
Vertical sync polarity	-	-	-	-	-	TTL
Horiz sync polarity	+	-	-	-	-	TTL

MAGNAVOX LIMITED WARRANTY

One (1) Year Labor & One (1) Year Parts & One (1) Year Display Repair

MAGNAVOX warrants this product against defect in material or workmanship, subject to any conditions set forth as follows:

PROOF OF PURCHASE:
You must have proof of the date of purchase to receive repair on the product. A sales receipt or other document showing the product and the date that you purchased the product as well as the authorized retailer included, is considered such proof.

COVERAGE:
(If this product is determined to be defective)

LABOR: For a period of one (1) year from the date of purchase, Magnavox will repair or replace the product, at its option, at no charge, or pay the labor charges to any Magnavox authorized service center. After the period of one (1) year, Magnavox will no longer be responsible for charges incurred.

PARTS: For a period of one (1) year from the date of purchase, Magnavox will supply, at no charge, new or rebuilt replacement parts in exchange for defective parts. Magnavox authorized service centers will provide removal and installation of the parts for one (1) year.

DISPLAY: For a period of one (1) year from the date of purchase, Magnavox will supply, at no charge, a new or rebuilt active display device in exchange for the defective display. Magnavox authorized service centers will provide removal and installation of the parts under the specified labor warranty. (PTV screens carry a thirty (30) day replacement warranty.)

EXCLUDED FROM WARRANTY COVERAGE
Your warranty does not cover:

- Labor charges for installation or setup of the product, adjustment of customer controls on the product, and installation or repair of antenna systems outside of the product.
- Product repair and/or part replacement because of improper installation, connections to improper voltage supply, abuse, neglect, misuse, accident, unauthorized repair or other cause not within the control of Magnavox.
- A product that requires modification or adaptation to enable it to operate in any country other than the country for which it was designed, manufactured, approved and/or authorized, or repair of products damaged by these modifications.
- Damage occurring to product during shipping when improperly packaged or costs associated with packaging
- Product lost in shipment and no signature verification of receipt can be provided.
- A product used for commercial or institutional purposes (including but not limited to rental purposes).
- Products sold AS IS or RENEWED.

TO OBTAIN WARRANTY SERVICE IN THE U.S.A., PUERTO RICO, OR U.S. VIRGIN ISLANDS...
Contact Magnavox Customer Care Center at:
1-800-705-2000

TO OBTAIN WARRANTY SERVICE IN CANADA...
1-800-661-6162 (French Speaking)
1-800-705-2000 (English or Spanish Speaking)

REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY FOR THE CONSUMER. MAGNAVOX SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ON THIS PRODUCT. EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS PRODUCT IS LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY.

Some states do not allow the exclusions or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. In addition, if you enter into a service contract agreement with the MAGNAVOX partnership within ninety (90) days of the date of sale, the limitation on how long an implied warranty lasts does not apply.

This warranty gives you specific legal rights. You may have other rights which vary from state/province to state/province.

Magnavox, P.O. Box 671539, Marietta, GA. 30006-0026

(Warranty: 4835 710 28275)